US009407686B2

(12) **United States Patent**
Runstedler et al.

(10) **Patent No.: US 9,407,686 B2**
(45) **Date of Patent: Aug. 2, 2016**

(54) **DEVICE TO-DEVICE TRANSFER**

(75) Inventors: **Christopher Runstedler**, Cambridge (CA); **Rohit Jain**, Waterloo (CA); **Michael Hardy**, Waterloo (CA)

(73) Assignee: **BlackBerry Limited**, Waterloo, Ontario (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 915 days.

(21) Appl. No.: **12/395,083**

(22) Filed: **Feb. 27, 2009**

(65) **Prior Publication Data**

US 2010/0223359 A1 Sep. 2, 2010

(51) **Int. Cl.**

G06F 15/16	(2006.01)
H04L 29/08	(2006.01)
H04W 4/08	(2009.01)
H04W 8/18	(2009.01)
H04W 12/06	(2009.01)

(52) **U.S. Cl.**

CPC ***H04L 67/06*** (2013.01); ***H04L 67/325*** (2013.01); ***H04W 4/08*** (2013.01); ***H04W 8/186*** (2013.01); *H04W 12/06* (2013.01)

(58) **Field of Classification Search**

CPC H04W 4/08; H04W 8/186; H04W 12/06; H04L 67/325; H04L 67/06

USPC 709/201–206, 217–232

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,999,611	A	12/1999	Tatchell et al.
6,160,877	A	12/2000	Tatchell et al.
6,223,291	B1	4/2001	Puhl et al.
6,259,405	B1	7/2001	Stewart et al.
6,301,484	B1	10/2001	Rogers et al.
6,393,484	B1	5/2002	Massarani
6,397,246	B1	5/2002	Wolfe
6,430,170	B1	8/2002	Saints et al.
6,542,491	B1	4/2003	Tari et al.
6,581,025	B2	6/2003	Lehman
6,591,095	B1	7/2003	Palaniswamy
6,615,038	B1	9/2003	Moles et al.
6,628,928	B1	9/2003	Crosby et al.
6,675,165	B1	1/2004	Rothschild
6,684,397	B1	1/2004	Byer et al.
6,721,578	B2	4/2004	Minear et al.
6,728,531	B1	4/2004	Lee et al.
6,781,236	B2	8/2004	Shimooka et al.

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0973299 A2	1/2000
EP	1014629	6/2000

(Continued)

OTHER PUBLICATIONS

"GloMop: Global Mobile Computing by Proxy", *White Paper, GloMop Group*, (Sep. 13, 1995), 12 pgs.

(Continued)

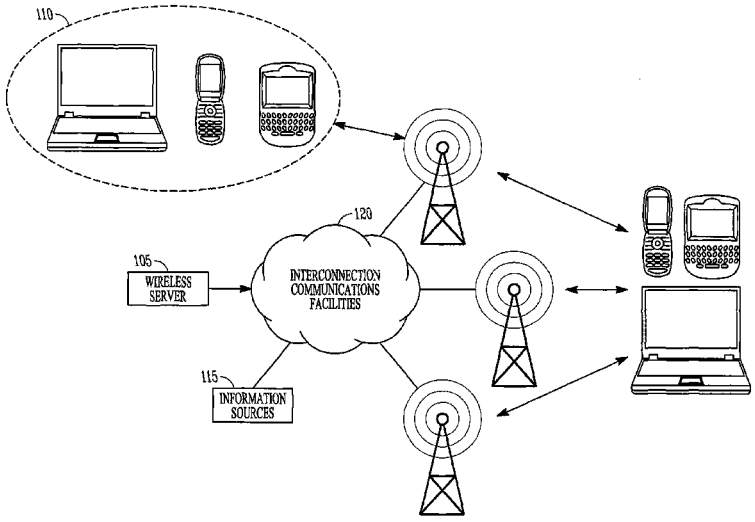
Primary Examiner — Abdullahi E Salad

(74) *Attorney, Agent, or Firm* — Jeffrey N. Giunta; Fleit Gibbons Gutman Bongini & Bianco P.L.

(57) **ABSTRACT**

Apparatus and methods to engage in a transfer of informational content between a first mobile electronic device and a second mobile electronic device using directed transmission between a first server and a second server. Additional apparatus, systems, and methods are disclosed.

26 Claims, 11 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

6,804,523	B2	10/2004	Shiraga	
6,944,760	B2	9/2005	Wils	
6,968,389	B1	11/2005	Menditto et al.	
6,981,020	B2	12/2005	Miloslavsky et al.	
6,993,326	B2	1/2006	Link, II et al.	
7,043,263	B2	5/2006	Kaplan et al.	
7,069,319	B2	6/2006	Zellner et al.	
7,107,045	B1	9/2006	Knoop	
7,127,241	B2	10/2006	Castrogiovanni et al.	
7,171,199	B1 *	1/2007	Rahman	455/433
7,227,930	B1	6/2007	Othmer et al.	
7,233,975	B1	6/2007	Gerraty et al.	
7,236,769	B2	6/2007	Irlam et al.	
7,349,710	B2	3/2008	Kaplan et al.	
7,415,439	B2 *	8/2008	Kontio et al.	705/53
7,430,472	B2	9/2008	Zhao et al.	
7,447,497	B2	11/2008	Okita et al.	
7,480,264	B1	1/2009	Duo et al.	
7,516,478	B2	4/2009	Limont et al.	
7,526,278	B2	4/2009	Link, II et al.	
7,636,574	B2	12/2009	Poosala	
7,639,654	B2	12/2009	Riazi et al.	
7,640,039	B2	12/2009	Kamada	
7,640,293	B2	12/2009	Wilson et al.	
7,647,409	B2	1/2010	Banerjee et al.	
7,657,271	B2	2/2010	Kim	
7,676,516	B2	3/2010	Boukobza	
7,702,915	B2 *	4/2010	McCann et al.	713/184
7,773,981	B2	8/2010	Okita et al.	
7,917,641	B2	3/2011	Crampton	
7,945,642	B1	5/2011	Hung et al.	
7,970,430	B2	6/2011	Backof, Jr. et al.	
7,986,635	B2	7/2011	Kawamura	
8,005,922	B2	8/2011	Boudreau et al.	
8,065,361	B2	11/2011	Runstedler	
8,086,677	B2	12/2011	Murphy	
2002/0013155	A1	1/2002	Jamthe et al.	
2002/0013850	A1	1/2002	Mitchell et al.	
2003/0008662	A1	1/2003	Stern et al.	
2003/0041125	A1	2/2003	Salomon	
2003/0078036	A1	4/2003	Chang et al.	
2003/0119386	A1	6/2003	Laux et al.	
2003/0142653	A1 *	7/2003	Jiang et al.	370/338
2003/0236823	A1	12/2003	Patzer et al.	
2004/0024795	A1	2/2004	Hind et al.	
2004/0042432	A1	3/2004	Riazi et al.	
2004/0053602	A1	3/2004	Wurzburg	
2004/0180673	A1	9/2004	Adams et al.	
2004/0198456	A1	10/2004	Kelkar	
2004/0209650	A1	10/2004	Pearce	
2004/0225525	A1	11/2004	Weitzman	
2004/0249846	A1	12/2004	Randall et al.	
2004/0249961	A1	12/2004	Katsube et al.	
2004/0267873	A1	12/2004	Shen et al.	
2005/0018695	A1 *	1/2005	Ramaswamy et al.	370/400
2005/0102328	A1	5/2005	Ring et al.	
2005/0141447	A1	6/2005	Carlton et al.	
2005/0233693	A1	10/2005	Karaoguz et al.	
2005/0239034	A1	10/2005	McKeagney et al.	
2006/0021059	A1	1/2006	Brown et al.	
2006/0053380	A1	3/2006	Spataro et al.	
2006/0167940	A1 *	7/2006	Colton et al.	707/104.1
2006/0167985	A1	7/2006	Albanese et al.	
2006/0277408	A1	12/2006	Bhat et al.	
2007/0006289	A1	1/2007	Limont et al.	
2007/0023292	A1	2/2007	Kim	
2007/0027920	A1	2/2007	Alvarado et al.	
2007/0073874	A1	3/2007	Moghaddam et al.	
2007/0087682	A1	4/2007	DaCosta	
2007/0180119	A1	8/2007	Khivesara et al.	
2007/0232268	A1	10/2007	Park et al.	
2007/0299918	A1	12/2007	Roberts	
2008/0036591	A1	2/2008	Ray	
2008/0095373	A1 *	4/2008	Nagata et al.	380/278
2008/0096537	A1	4/2008	Milojkovic et al.	
2008/0126803	A1	5/2008	Ginter et al.	
2008/0134018	A1	6/2008	Kembel et al.	
2008/0189373	A1	8/2008	Ikonen et al.	
2008/0208956	A1	8/2008	Spiridellis et al.	
2008/0216148	A1	9/2008	Bienek et al.	
2008/0222711	A1	9/2008	Michaelis	
2008/0256204	A1	10/2008	Kamat et al.	
2008/0261569	A1	10/2008	Britt et al.	
2009/0028049	A1	1/2009	Boudreau et al.	
2009/0030968	A1	1/2009	Boudreau et al.	
2009/0030974	A1	1/2009	Boudreau et al.	
2009/0030995	A1	1/2009	Boudreau	
2009/0031250	A1	1/2009	Boudreau	
2009/0031296	A1	1/2009	Boudreau et al.	
2009/0034463	A1	2/2009	Rao	
2009/0036111	A1	2/2009	Danford et al.	
2009/0068994	A1	3/2009	Murphy	
2009/0070429	A1	3/2009	Murphy	
2009/0125521	A1	5/2009	Petty	
2009/0138547	A1	5/2009	Boudreau	
2009/0292799	A1	11/2009	Eisener et al.	
2010/0223321	A1	9/2010	Runstedler et al.	
2010/0306258	A1	12/2010	Espino	
2012/0066299	A1	3/2012	Runstedler et al.	
2012/0096101	A1	4/2012	Murphy	

FOREIGN PATENT DOCUMENTS

EP	1158438	A2	11/2001
EP	1383347		1/2004
EP	1531641		5/2005
EP	1684535	A1	7/2006
EP	1750422		2/2007
WO	WO-02044958	A1	6/2002
WO	WO-02087188	A1	10/2002
WO	WO-03048964	A1	6/2003
WO	WO-2007130214	A2	11/2007

OTHER PUBLICATIONS

"GloMop: Global Mobile Computing by Proxy, GloMop Technology Overview", fox@cs.berkeley.edu—Armando's home page; file:/C:\unzipped\pythia_demo_pages\pythia\index.html, White Paper. Dated Jul. 6, 2005, (Downloaded Jul. 6, 2005), 11 pgs.

Bartlett, Joel F., "Experience with a Wireless World Wide Web Client", *WRL Technical Note TN-46*, White Paper, This is a preprint of a paper that will be presented at IEEE Spring COMPCON95, San Francisco, California, Mar. 5-9, 1995, (Mar. 1995), 17 pgs.

Courtois, Todd, et al., "Portal: a PDA to World Wide Web Interface", *PDA Developers vol. 3.1*, (Jan./Feb. 1995), 18-20.

Greenberg, S., et al., "POAs and Shared Public Displays: Making Personal Information Public, and Public Information Personal", *Personal Technologies*, (Mar. 1999), 11 pgs.

Joshi, Anupam, "Mowser: Mobile Platforms and Web Browsers", *Bulletin of the IEEE Technical Committee on Operating Systems and Application Environments 8*, No. 1, (1996), 6 pgs.

Watson, T., "Application design for wireless computing", *Workshop on Mobile Computing Systems and Applications*, 1994. Proceedings. Workshop on Mobile Computing Systems and Applications; Citation: Dec. 8-9, 1994, Santa Cruz, CA, (1994), 91-94.

U.S. Appl. No. 12/172,015, filed Jul. 11, 2008, Wireless Communication Systems.

U.S. Appl. No. 12/172,037, filed Jul. 11, 2008, Administration of Wireless Devices in a Wireless Communication System.

U.S. Appl. No. 12/171,858, filed Jul. 11, 2008, Wireless Communication System Installation.

U.S. Appl. No. 12/171,975, filed Jul. 11, 2008, Administration of Policies for Wireless Devices in a Wireless Communication System.

U.S. Appl. No. 12/171,950, filed Jul. 11, 2008, Apparatus and Methods for Coordination of Wireless Systems.

U.S. Appl. No. 11/829,885, filed Jul. 28, 2007, Administration of Wireless Systems.

U.S. Appl. No. 11/829,884, filed Jul. 28, 2007, Information Exchange in Wireless Servers.

(56) **References Cited**

OTHER PUBLICATIONS

U.S. Appl. No. 12/172,051, filed Jul. 11, 2008, Administration of Wireless Systems.
U.S. Appl. No. 13/335,851 filed Dec. 22, 2011, Information Exchange in Wireless Servers.
U.S. Appl. No. 12/171,887, filed Jul. 11, 2008, Appartus and Methods for Operation of a Wireless Server.
U.S. Appl. No. 11/829,872, filed Jul. 27, 2007, Method and System for Resource Sharing.
U.S. Appl. No. 12/171,925, filed Jul. 11, 2008, Method and System for Resource Sharing.
U.S. Appl. No. 12/172,026, filed Jul. 11, 2008, Remote Administration of Mobile Wireless Devices.
U.S. Appl. No. 13/301,006, filed Nov. 21, 2011, Data Hub Server.
"U.S. Appl. No. 12/171,858, Final Office Action mailed May 4, 2012", 22 pgs.
"U.S. Appl. No. 12/171,858, Non Final Office Action mailed Oct. 14, 2011", 19 pgs.
"U.S. Appl. No. 12/171,858, Response filed Jan. 13, 2012 to Non Final Office Action mailed Oct. 14, 2011", 14 pgs.
"U.S. Appl. No. 12/171,887, Non Final Office Action mailed Mar. 15, 2012", 5 pgs.
"U.S. Appl. No. 12/171,887, Non Final Office Action mailed Sep. 14, 2011", 5 pgs.
"U.S. Appl. No. 12/171,887, Response filed Jan. 13, 2012 to Non Final Office Action mailed Sep. 14, 2011", 13 pgs.
"U.S. Appl. No. 12/171,887, Response filed Jun. 14, 2012 to Non Final Office Action mailed Mar. 15, 2012", 14 pgs.
"U.S. Appl. No. 12/171,925, Final Office Action mailed Jun. 22, 2012", 23 pgs.
"U.S. Appl. No. 12/171,925, Non Final Office Action mailed Jul. 25, 2011", 23 pgs.
"U.S. Appl. No. 12/171,925, Response filed Jan. 25, 2012 to Non Final Office Action mailed Jul. 25, 2011", 20 pgs.
"U.S. Appl. No. 12/171,940, Notice of Allowance mailed Apr. 18, 2011", 5 pgs.
"U.S. Appl. No. 12/171,950, Non Final Office Action mailed Mar. 13, 2012", 6 pgs.
"U.S. Appl. No. 12/171,950, Response filed Jun. 13, 2012 to Non Final Office Action mailed Mar. 13, 2012", 23 pgs.
"U.S. Appl. No. 12/171,975, Final Office Action mailed May 12, 2011", 21 pgs.
"U.S. Appl. No. 12/171,975, Response filed Feb. 28, 2011 to Non Final Office Action mailed Oct. 28, 2010", 13 pgs.
"U.S. Appl. No. 12/171,975, Response filed Sep. 12, 2011 to Final Office Action mailed May 12, 2011", 13 pgs.
"U.S. Appl. No. 12/172,006, Examiner Interview Summary mailed Mar. 30, 2011", 2 pgs.
"U.S. Appl. No. 12/172,006, Final Office Action mailed Apr. 27, 2011", 15 pgs.
"U.S. Appl. No. 12/172,006, Notice of Allowance mailed Aug. 26, 2011", 5 pgs.
"U.S. Appl. No. 12/172,006, Response filed Feb. 14, 2011 to Non Final Office Action mailed Oct. 14, 2010", 10 pgs.
"U.S. Appl. No. 12/172,006, Response filed Jul. 27, 2011 to Final Office Action mailed Apr. 27, 2011", 7 pgs.
"U.S. Appl. No. 12/172,015, Advisory Action mailed Jan. 27, 2011", 3 pgs.
"U.S. Appl. No. 12/172,015, Non Final Office Action mailed Mar. 27, 2012", 5 pgs.
"U.S. Appl. No. 12/172,015, Response filed Jan. 18, 2011 to Final Office Action mailed Nov. 18, 2010", 15 pgs.
"U.S. Appl. No. 12/172,026, Non Final Office Action mailed Apr. 4, 2012", 8 pgs.
"U.S. Appl. No. 12/172,037 , Response filed Mar. 27, 2012 to Non Final Office Action mailed Sep. 27, 2011", 12 pgs.
"U.S. Appl. No. 12/172,037, Non Final Office Action mailed Sep. 27, 2011", 10 pgs.
"U.S. Appl. No. 12/172,051, Final Office Action mailed Jun. 11, 2012", 14 pgs.
"U.S. Appl. No. 12/172,051, Non Final Office Action mailed Sep. 1, 2011", 11 pgs.
"U.S. Appl. No. 12/172,051, Response filed Jan. 31, 2012 to Non Final Office Action mailed Sep. 1, 2011", 12 pgs.
"U.S. Appl. No. 12/394,994, Final Office Action mailed Apr. 13, 2011", 7 pgs.
"U.S. Appl. No. 12/394,994, Notice of Allowance mailed Jul. 1, 2011", 8 pgs.
"U.S. Appl. No. 12/394,994, Response filed Jan. 18, 2011 to Non Final Office Action mailed Oct. 18, 2010", 15 pgs.
"U.S. Appl. No. 12/394,994, Response filed Jun. 13, 2011 to Final Office Action mailed Apr. 13, 2011", 14 pgs.
"U.S. Appl. No. 13/335,851, Non Final Office Action mailed Apr. 3, 2012", 34 pgs.
"Canadian Application Serial No. 2,670,855, Office Action mailed Feb. 14, 2012", 3 pgs.
"Canadian Application Serial No. 2,670,855, Office Action mailed Apr. 14, 2011", 3 Pgs.
"Canadian Application Serial No. 2,670,855, Response filed Oct. 14, 2011, to Office Action mailed Apr. 14, 2011", 20 pgs.
"European Application Serial No. 09153893.4, Response filed Nov. 10, 2009 to Extended European Search Report mailed Aug. 20, 2009", 18 pgs.
Article 94(3) EPC from related European Patent Application No. 09153893.4 dated Mar. 11, 2013; 4 pages.

* cited by examiner

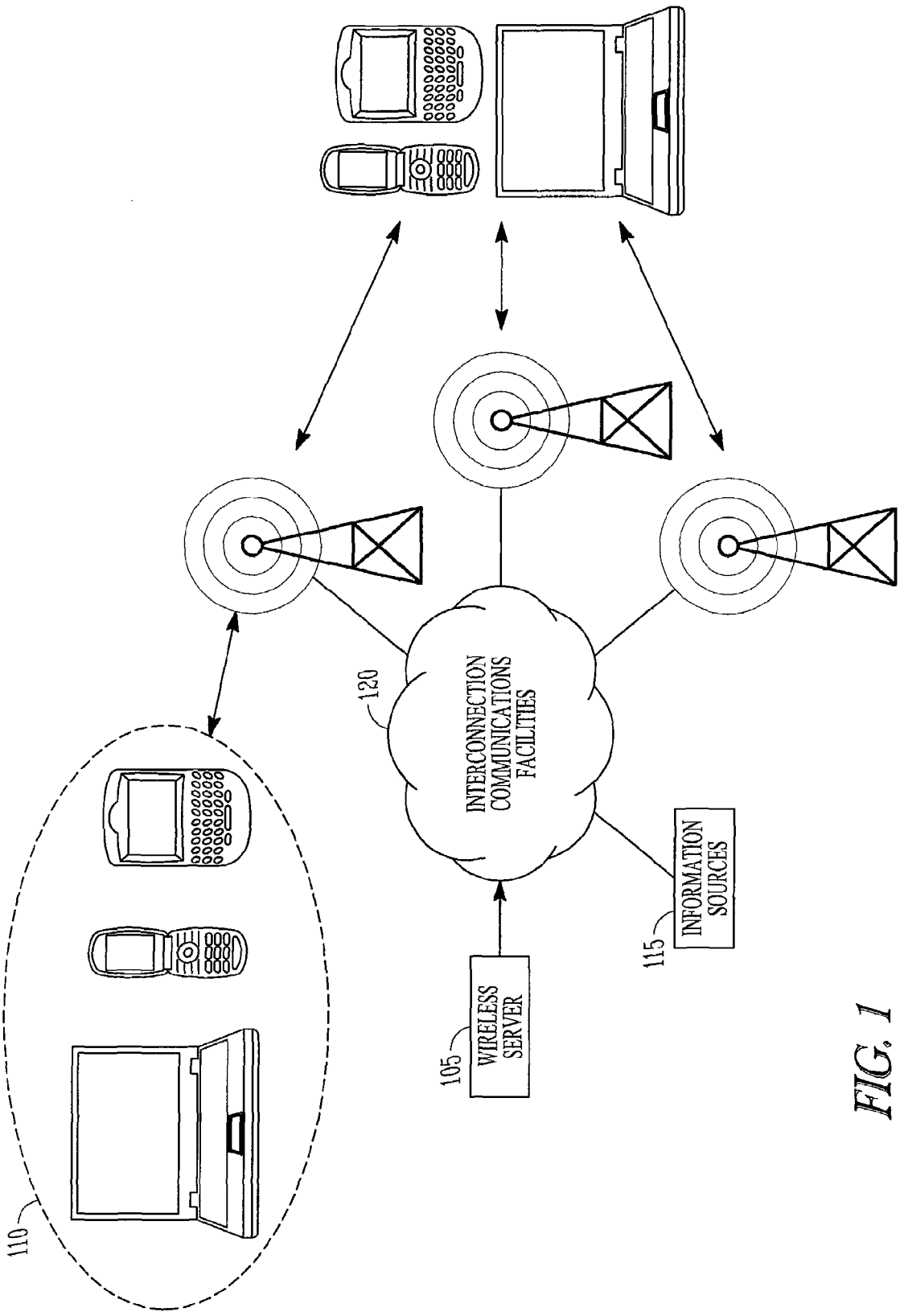

INTERCONNECTION COMMUNICATIONS FACILITIES
120
WIRELESS SERVER
105
INFORMATION SOURCES
115
110

FIG. 1

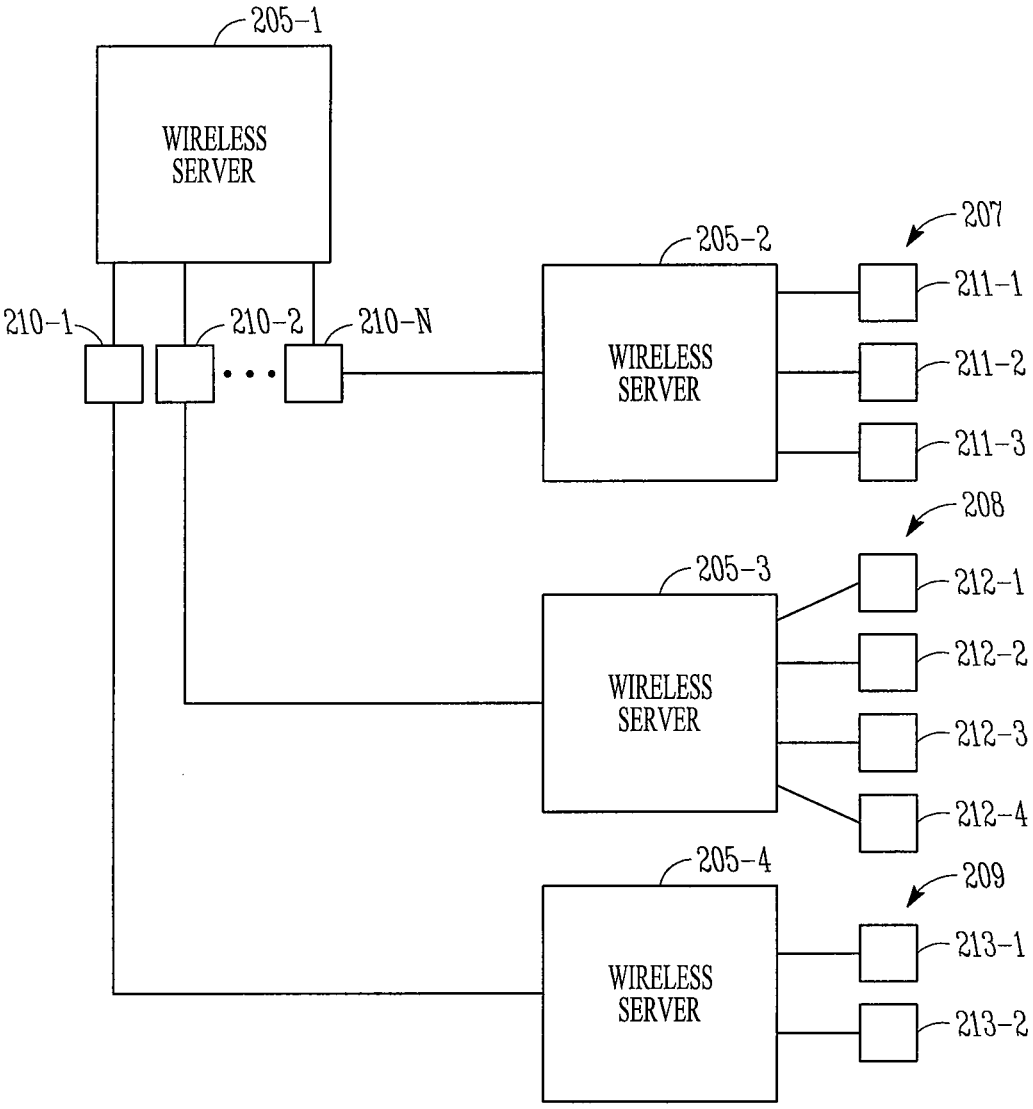

205-1
WIRELESS SERVER
210-1
210-2
210-N
205-2
WIRELESS SERVER
207
211-1
211-2
211-3
208
205-3
WIRELESS SERVER
212-1
212-2
212-3
212-4
205-4
WIRELESS SERVER
209
213-1
213-2

FIG. 2

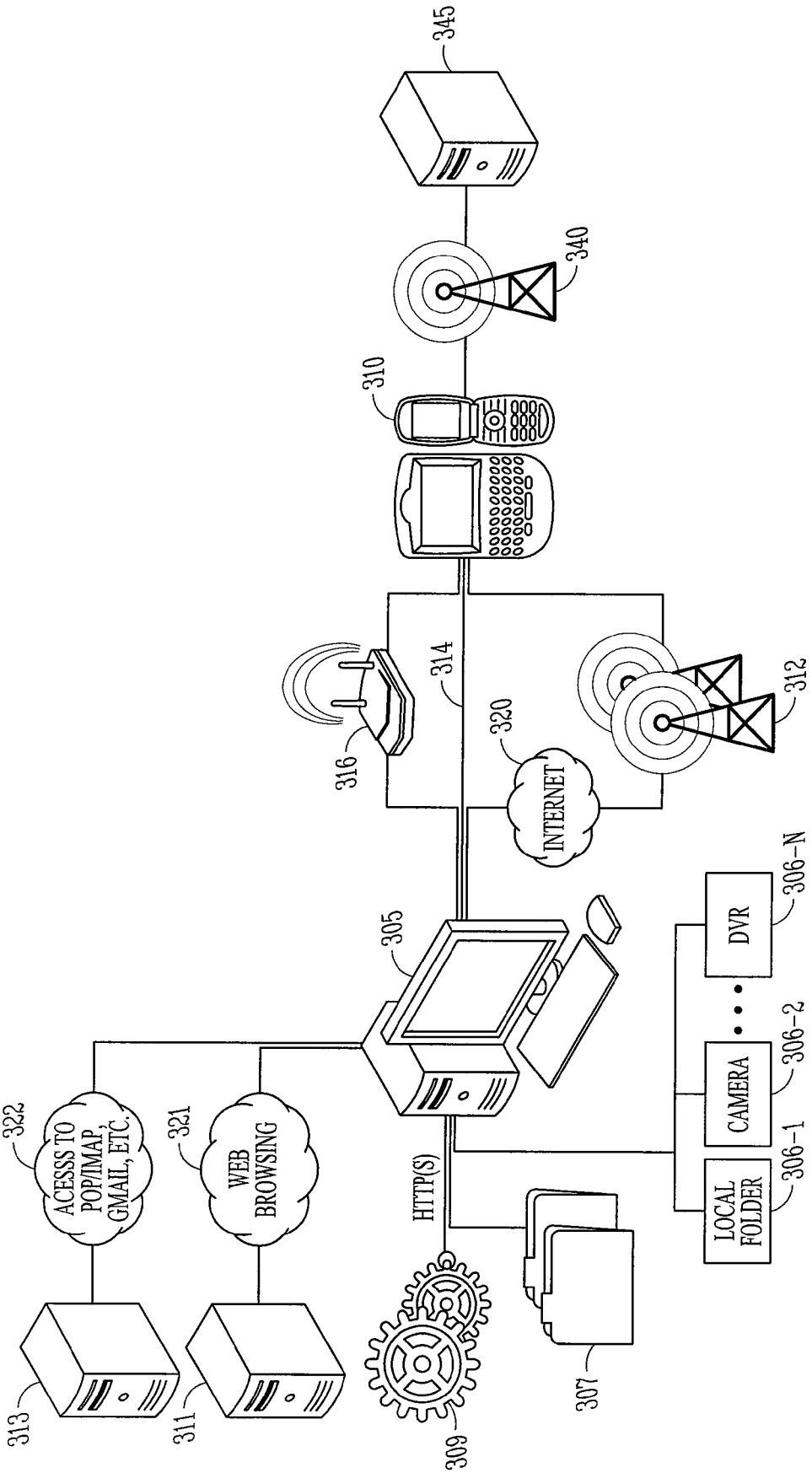

345
340
310
314
316
320
312
INTERNET
305
306-N
DVR
306-2
CAMERA
306-1
LOCAL FOLDER
322
ACESSS TO POP/IMAP, GMAIL, ETC.
321
WEB BROWSING
HTTP(S)
313
311
309
307

FIG. 3

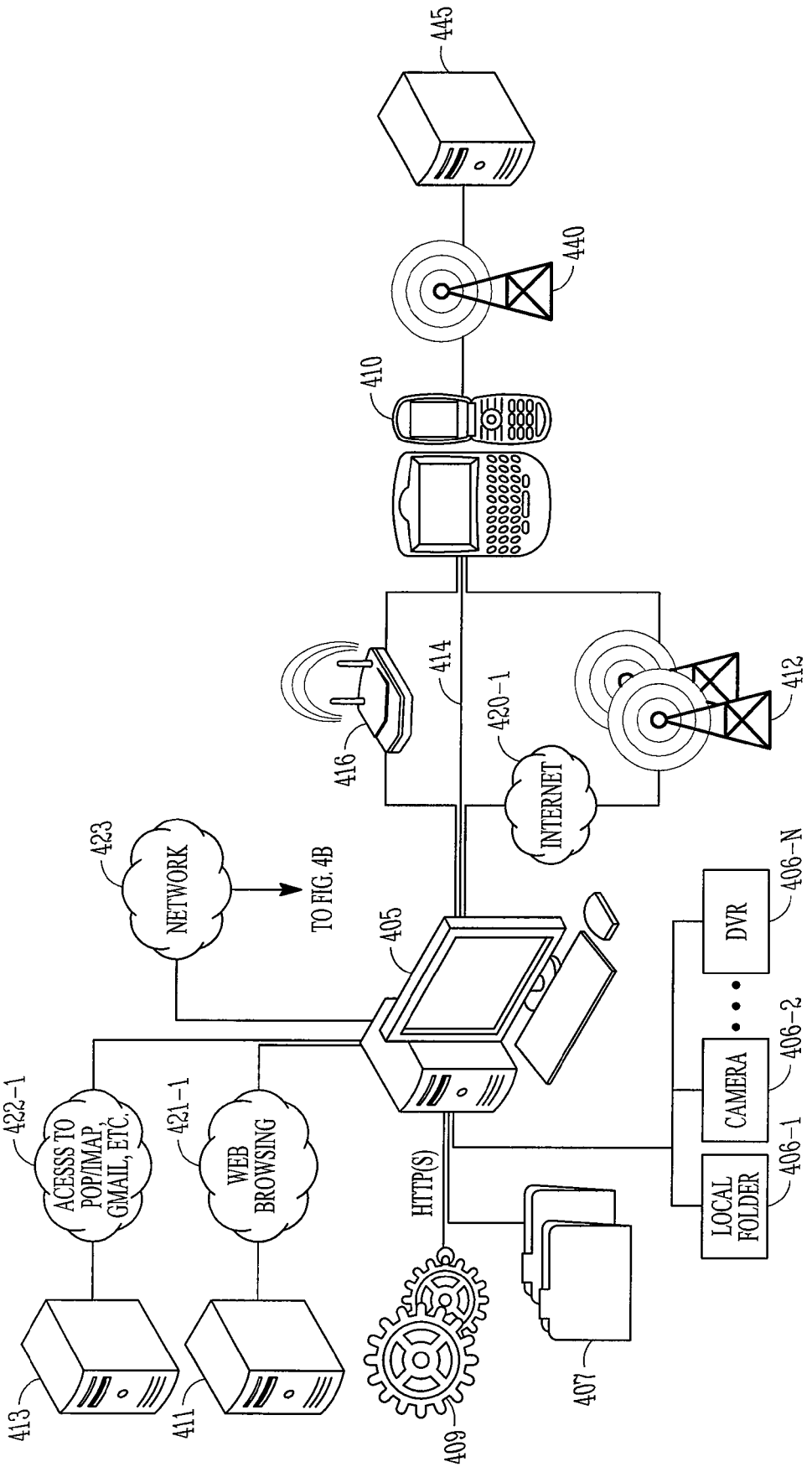

445
440
410
416
414
420-1
412
INTERNET
423
NETWORK
TO FIG. 4B
405
406-N
DVR
406-2
CAMERA
406-1
LOCAL FOLDER
422-1
ACESSS TO POP/IMAP, GMAIL, ETC.
421-1
WEB BROWSING
HTTP(S)
413
411
409
407

FIG. 4A

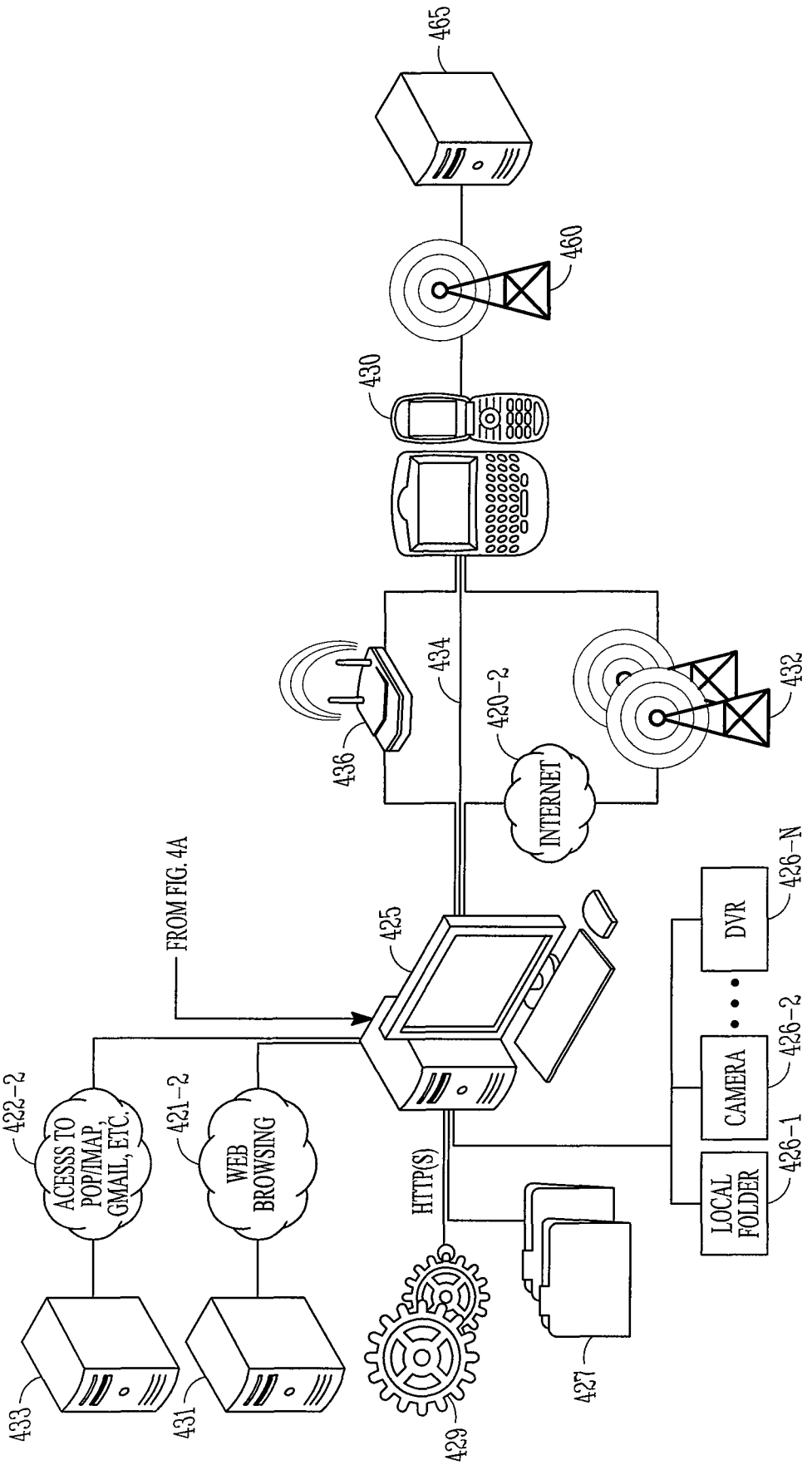

465
460
430
434
420-2
436
432
INTERNET
FROM FIG. 4A
425
426-N
DVR
426-2
CAMERA
426-1
LOCAL FOLDER
422-2
ACESSS TO POP/IMAP, GMAIL, ETC.
421-2
WEB BROWSING
HTTP(S)
433
431
429
427

FIG. 4B

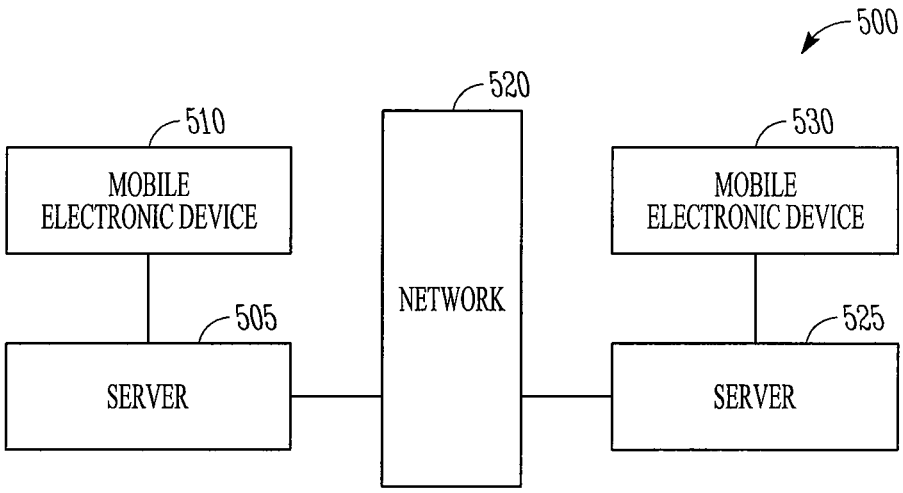

500
520
510
530
MOBILE ELECTRONIC DEVICE
NETWORK
MOBILE ELECTRONIC DEVICE
505
525
SERVER
SERVER

FIG. 5

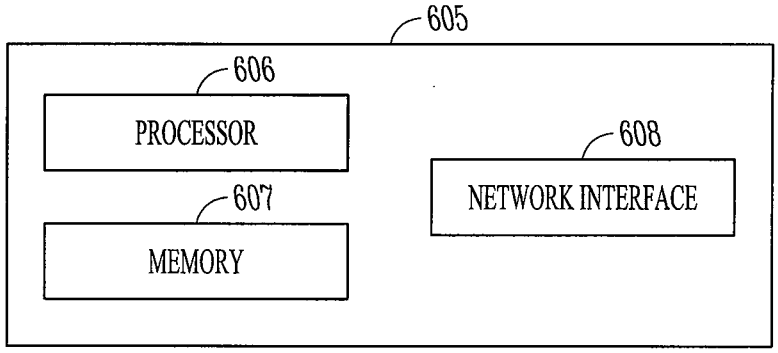

605
606
PROCESSOR
608
NETWORK INTERFACE
607
MEMORY

FIG. 6

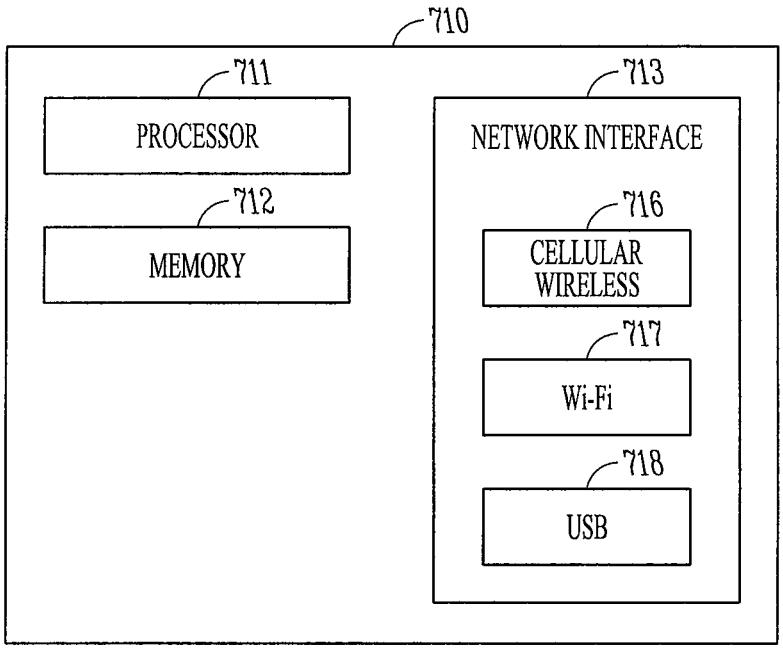

710
711
PROCESSOR
712
MEMORY
713
NETWORK INTERFACE
716
CELLULAR WIRELESS
717
Wi-Fi
718
USB

FIG. 7

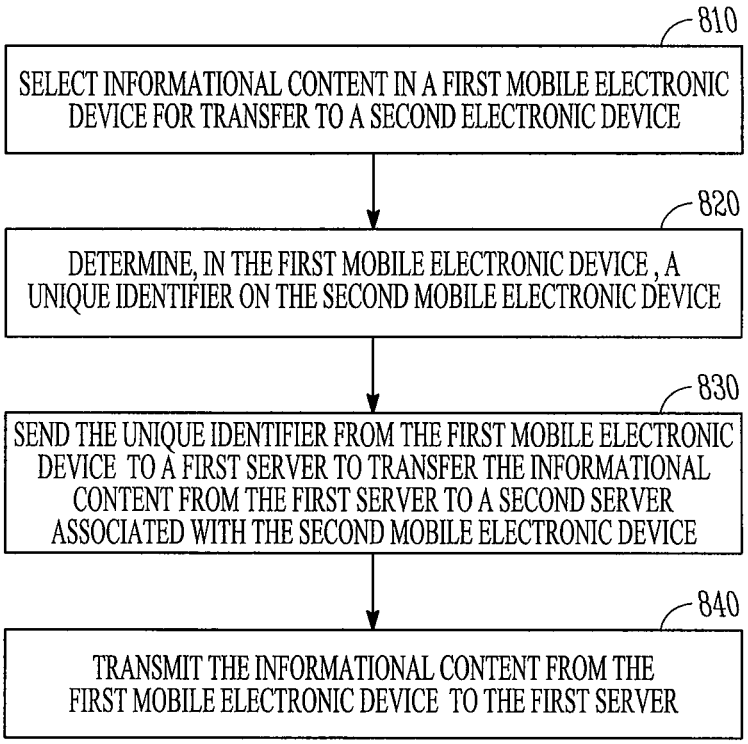

810
SELECT INFORMATIONAL CONTENT IN A FIRST MOBILE ELECTRONIC DEVICE FOR TRANSFER TO A SECOND ELECTRONIC DEVICE
820
DETERMINE, IN THE FIRST MOBILE ELECTRONIC DEVICE , A UNIQUE IDENTIFIER ON THE SECOND MOBILE ELECTRONIC DEVICE
830
SEND THE UNIQUE IDENTIFIER FROM THE FIRST MOBILE ELECTRONIC DEVICE TO A FIRST SERVER TO TRANSFER THE INFORMATIONAL CONTENT FROM THE FIRST SERVER TO A SECOND SERVER ASSOCIATED WITH THE SECOND MOBILE ELECTRONIC DEVICE
840
TRANSMIT THE INFORMATIONAL CONTENT FROM THE FIRST MOBILE ELECTRONIC DEVICE TO THE FIRST SERVER

FIG. 8

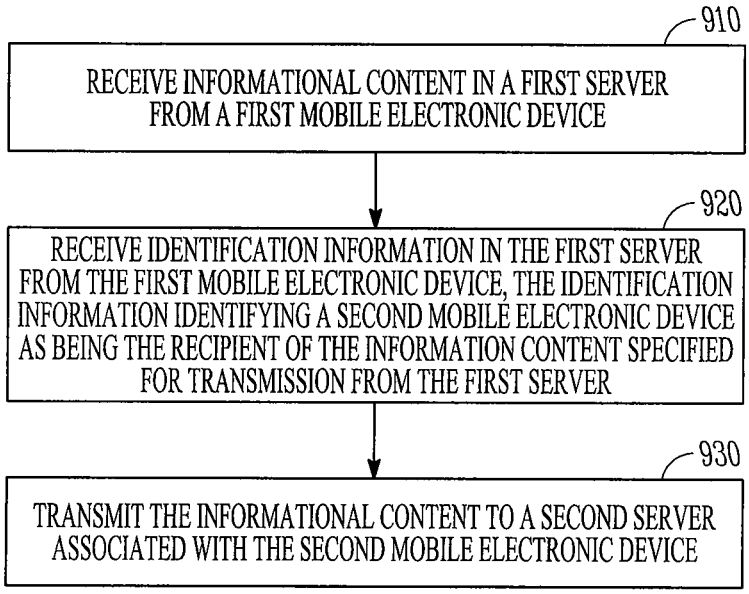

910
RECEIVE INFORMATIONAL CONTENT IN A FIRST SERVER FROM A FIRST MOBILE ELECTRONIC DEVICE
920
RECEIVE IDENTIFICATION INFORMATION IN THE FIRST SERVER FROM THE FIRST MOBILE ELECTRONIC DEVICE, THE IDENTIFICATION INFORMATION IDENTIFYING A SECOND MOBILE ELECTRONIC DEVICE AS BEING THE RECIPIENT OF THE INFORMATION CONTENT SPECIFIED FOR TRANSMISSION FROM THE FIRST SERVER
930
TRANSMIT THE INFORMATIONAL CONTENT TO A SECOND SERVER ASSOCIATED WITH THE SECOND MOBILE ELECTRONIC DEVICE

FIG. 9

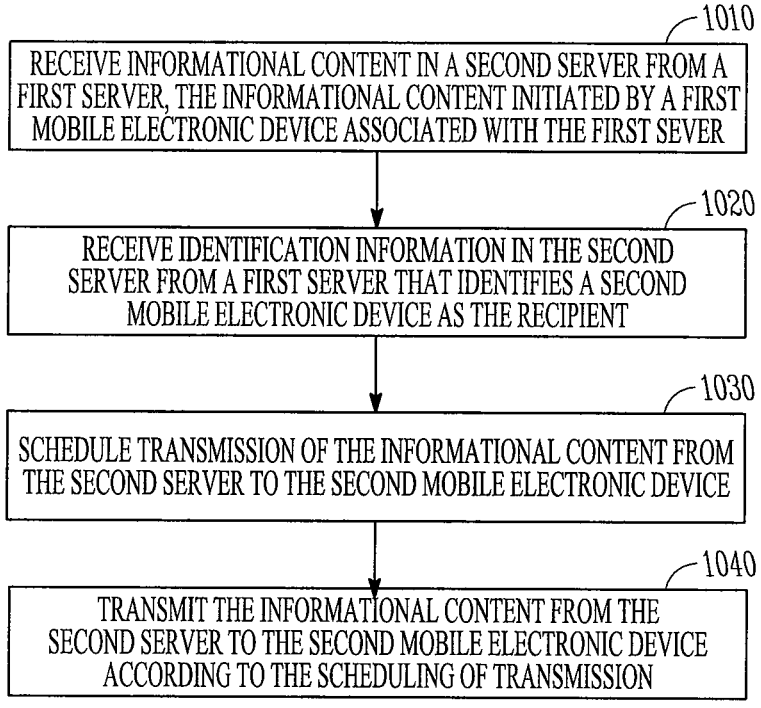

1010
RECEIVE INFORMATIONAL CONTENT IN A SECOND SERVER FROM A FIRST SERVER, THE INFORMATIONAL CONTENT INITIATED BY A FIRST MOBILE ELECTRONIC DEVICE ASSOCIATED WITH THE FIRST SEVER
1020
RECEIVE IDENTIFICATION INFORMATION IN THE SECOND SERVER FROM A FIRST SERVER THAT IDENTIFIES A SECOND MOBILE ELECTRONIC DEVICE AS THE RECIPIENT
1030
SCHEDULE TRANSMISSION OF THE INFORMATIONAL CONTENT FROM THE SECOND SERVER TO THE SECOND MOBILE ELECTRONIC DEVICE
1040
TRANSMIT THE INFORMATIONAL CONTENT FROM THE SECOND SERVER TO THE SECOND MOBILE ELECTRONIC DEVICE ACCORDING TO THE SCHEDULING OF TRANSMISSION

FIG. 10

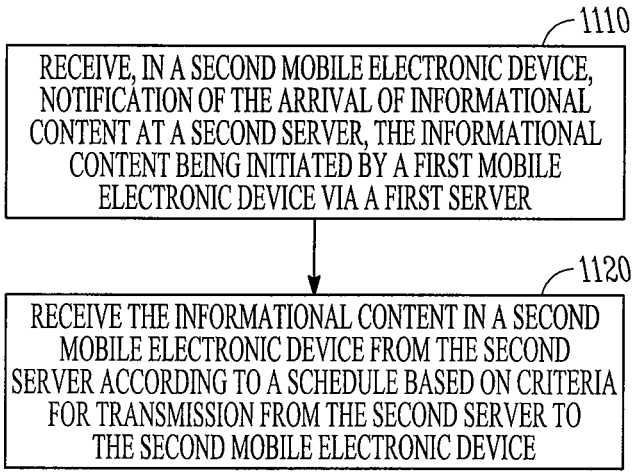

1110
RECEIVE, IN A SECOND MOBILE ELECTRONIC DEVICE, NOTIFICATION OF THE ARRIVAL OF INFORMATIONAL CONTENT AT A SECOND SERVER, THE INFORMATIONAL CONTENT BEING INITIATED BY A FIRST MOBILE ELECTRONIC DEVICE VIA A FIRST SERVER
1120
RECEIVE THE INFORMATIONAL CONTENT IN A SECOND MOBILE ELECTRONIC DEVICE FROM THE SECOND SERVER ACCORDING TO A SCHEDULE BASED ON CRITERIA FOR TRANSMISSION FROM THE SECOND SERVER TO THE SECOND MOBILE ELECTRONIC DEVICE

FIG. 11

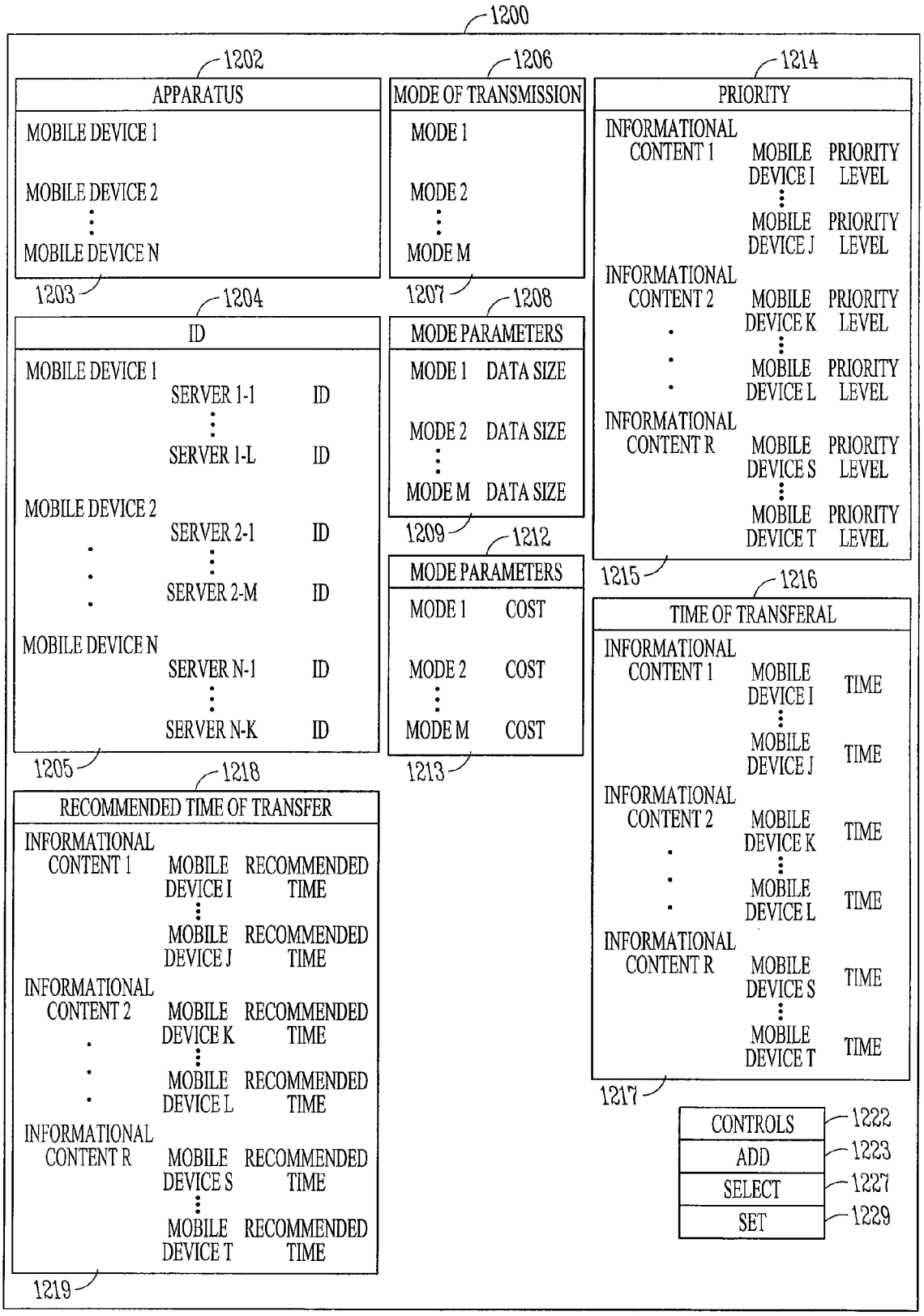

1200
1202
APPARATUS
MOBILE DEVICE 1
MOBILE DEVICE 2
MOBILE DEVICE N
1203
1204
ID
MOBILE DEVICE 1
SERVER 1-1 ID
SERVER 1-L ID
MOBILE DEVICE 2
SERVER 2-1 ID
SERVER 2-M ID
MOBILE DEVICE N
SERVER N-1 ID
SERVER N-K ID
1205
1218
RECOMMENDED TIME OF TRANSFER
INFORMATIONAL CONTENT 1
MOBILE DEVICE I RECOMMENDED TIME
MOBILE DEVICE J RECOMMENDED TIME
INFORMATIONAL CONTENT 2
MOBILE DEVICE K RECOMMENDED TIME
MOBILE DEVICE L RECOMMENDED TIME
INFORMATIONAL CONTENT R
MOBILE DEVICE S RECOMMENDED TIME
MOBILE DEVICE T RECOMMENDED TIME
1219
1206
MODE OF TRANSMISSION
MODE 1
MODE 2
MODE M
1207
1208
MODE PARAMETERS
MODE 1 DATA SIZE
MODE 2 DATA SIZE
MODE M DATA SIZE
1209
1212
MODE PARAMETERS
MODE 1 COST
MODE 2 COST
MODE M COST
1213
1214
PRIORITY
INFORMATIONAL CONTENT 1
MOBILE DEVICE I PRIORITY LEVEL
MOBILE DEVICE J PRIORITY LEVEL
INFORMATIONAL CONTENT 2
MOBILE DEVICE K PRIORITY LEVEL
MOBILE DEVICE L PRIORITY LEVEL
INFORMATIONAL CONTENT R
MOBILE DEVICE S PRIORITY LEVEL
MOBILE DEVICE T PRIORITY LEVEL
1215
1216
TIME OF TRANSFERAL
INFORMATIONAL CONTENT 1
MOBILE DEVICE I TIME
MOBILE DEVICE J TIME
INFORMATIONAL CONTENT 2
MOBILE DEVICE K TIME
MOBILE DEVICE L TIME
INFORMATIONAL CONTENT R
MOBILE DEVICE S TIME
MOBILE DEVICE T TIME
1217
CONTROLS 1222
ADD 1223
SELECT 1227
SET 1229

FIG. 12

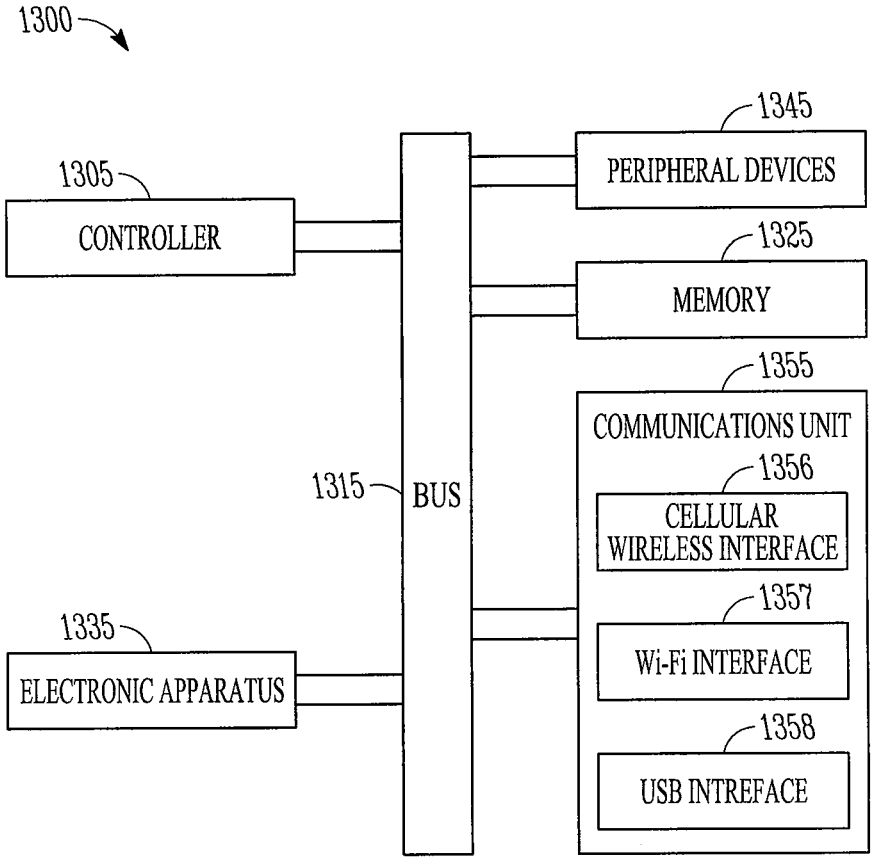

1300
1345
PERIPHERAL DEVICES
1305
CONTROLLER
1325
MEMORY
1355
COMMUNICATIONS UNIT
1315
BUS
1356
CELLULAR WIRELESS INTERFACE
1357
Wi-Fi INTERFACE
1335
ELECTRONIC APPARATUS
1358
USB INTREFACE

FIG. 13

DEVICE TO-DEVICE TRANSFER

BACKGROUND

Access to information is an important factor in the activities of individuals in modern society. Improvements to the flow of information enhance one's ability to interact with others, to respond to changing needs, and to avail oneself of enjoyment from processing various media based information.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention are illustrated by way of example and not limitation in the figures of the accompanying drawings in which:

FIG. **1** illustrates an embodiment of an architecture for operation of mobile wireless devices registered in a wireless server, according to various embodiments.

FIG. **2** depicts an embodiment of a wireless architecture in which a relationship between mobile wireless devices as clients of multiple wireless servers is illustrated.

FIG. **3** illustrates a block diagram of features of an architecture for mobile wireless devices registered in a wireless server, according to various embodiments.

FIGS. **4**A and **4**B illustrate a block diagram of features of an architecture for mobile wireless devices registered in different wireless servers, according to various embodiments.

FIG. **5** illustrates a block diagram of features of an architecture arranged for device-to-device transferal of informational content, according to various embodiments.

FIG. **6** shows a block diagram of features of an embodiment of a server that can be used in architectures similar to the architecture of FIGS. **4**A and **4**B and the architecture of FIG. **5**.

FIG. **7** shows a block diagram of features of an embodiment of a mobile electronic that can be used in architectures similar to the architecture of FIGS. **4**A and **4**B and the architecture of FIG. **5**.

FIG. **8** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments.

FIG. **9** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments.

FIG. **10** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments.

FIG. **11** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments.

FIG. **12** illustrates a representation of features of an example user interface to assist in the management of informational transfer in accordance with various embodiments.

FIG. **13** depicts a diagram of an embodiment of a system having a controller and a memory system, according to various embodiments.

DETAILED DESCRIPTION

The following detailed description refers to the accompanying drawings that show, by way of illustration, details and embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice embodiments of the invention. Other embodiments may be utilized and structural, logical, and electrical changes may be made. The various embodiments disclosed herein are not necessarily mutually exclusive, as some embodiments can be combined with one or more other embodiments to form new embodiments. The following detailed description is, therefore, not to be taken in a limiting sense.

In various embodiments, informational content can be transferred between a first mobile electronic device and a second mobile electronic device using directed transmission between a first server and a second server. The transfer can be based on a trust relationship between the first mobile electronic device and the second mobile electronic device. The first mobile electronic device can be registered in the first server as a client of the first server and the second mobile electronic device can be registered as a client of the second server. Each apparatus of the group including the first mobile electronic device, the second mobile electronic device, the first server, and the second server can be structured to perform operations within the apparatus for engaging in such transfer of the informational content between the first mobile electronic device and the second mobile electronic device. In various embodiments, these apparatus can be configured for engaging in the transfer of informational content such that the management of the transfer may be conducted with limited user interaction and, in various embodiments, the apparatus may perform various operations essentially autonomously.

By informational content, it is meant information for direct use by a user rather than data exchange between devices operating to accomplish a task not perceived by the user. Informational content can be presented in various forms including, but not limited to, files, data, and media content.

A user can access the informational content on electronic apparatus having input/output devices corresponding to the format of the informational content used. For example, media content can be transferred in audio media format, video media format, multi-media format, or other format that provides a presentation to be accessed as information or entertainment or both information and entertainment for use by an individual. In various embodiments, media content is managed in a system. Systems and methods for managing media content may be configured such that the management may be conducted with limited user interaction and, in various embodiments, the system may perform essentially autonomously. Media is a form of general communication, information, or entertainment in society, which is typically intended to be used by a large audience, thought not limited to a large audience. Various media may include, but are not limited to, music, movies, music videos, television shows, interactive applications, audio books, podcasts, games, and other presentations. Each form of media may be referred to as media content or media art. Associated with a item of media art that is stored or processed on an apparatus is a media file, which when operated on by an associated playing device (player) provides an output that can be presented as communication, information, entertainment, other presentations, or combinations thereof for the user.

Systems that manage media content and other informational content can include computers such as a personal computer (PC). A personal computer herein refers to computing devices having an operating system (OS) such that use of the personal computer may be conducted by individuals having little or no knowledge of the basics of the underlying hardware and software that operate the PC and whose operation may be conducted without individuals typically authoring computer programs to operate the computer. Portable com-

puters may include portable personal computers. An example of a portable PC is a laptop computer or notebook computer that typically has a display screen, some form of keyboard, underlying hardware and software, and a display pointing device that are all integrated in a housing that can easily be carried by an individual. Some personal digital assistants (PDAs) may be viewed as a type of portable computer. In various embodiments, a PC may include instrumentality for managing media content and instrumentality to operate as a wireless server. A wireless server is a server configuration that communicates with an entity over a channel established by the entities in a wireless network.

Various instrumentalities can be realized in hardware implementations, software implementations, and combinations of hardware and software implementations. Some portions of the instrumentalities may be described in terms of algorithms and symbolic representations of operations on data bits within a machine memory. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. The steps are those requiring physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. The instrumentality may operate to process, compute, calculate, determine, display, and/or conduct other activities correlated to processes of a machine such as a computer system, or similar electronic computing device, that manipulates and transforms data represented as physical (electronic) quantities within the computer system's registers and memories into other data similarly represented as physical quantities within the computer system memories or registers or other such information storage, transmission or display devices. The instrumentality may provide personalized capabilities, provide a pathway to other content, or combinations thereof. The instrumentality may use distributed applications, different numbers and types of software based components that couple two or more applications to enable data transfer between the applications, hardware to provide services from a number of different sources, and may be realized on a variety of platforms such as servers and content management systems. The instrumentality may include or provide access to subroutine code, code libraries, application program interfaces such as interpreters utilizing Java EE™, Simple DirectMedia Layer™ (SDL) and DirectX™, combinations thereof, or other such electronic based functionalities.

In various embodiments, a PC manages media content in relationship to one or more mobile electronic devices. These mobile electronic devices that can play media files and interact with the PC with respect to the management of media content on the mobile electronic device. In various embodiments, the mobile electronic devices include instrumentalities similar to those of the PC to manage the media content on the mobile electronic device, to browse media files in one or more PCs, and to engage with a PC in interactive management of media content on the mobile electronic device, the PC, and on other mobile electronic devices in which the media content may be shared. The mobile electronic device can be a mobile wireless device that includes communication features. Mobile wireless devices may include, but are not limited to, mobile telephones, portable computers, personal digital assistants, and other devices that may be conveniently carried by a user and provide wireless communication. Mobile telephones include wireless communication devices that have generally been referred to as cell phones. Mobile telephones may include a wide range of communication devices from portable phones with limited functionality beyond voice communication to portable phones capable of providing the functionality of a personal computer.

In various embodiments, a machine-readable medium, such as a non-transitory machine-readable storage medium, stores instructions, which when performed by a machine, cause the machine to perform operations comprising engaging in a transfer of informational content between a first mobile electronic device and a second mobile electronic device using directed transmission between a first server and a second server. The first mobile electronic device can be registered in the first server as a client of the first server and the second mobile electronic device can be registered as a client of the second server. The instructions can include instructions to analysis a set of criteria for the transfer. Analyzing the criteria can includes accessing a matrix of costs or speed of transfer or both, where the matrix has elements dependent upon a mode of transmission and size of data transmission to transfer the informational content between the first mobile electronic device and the second mobile electronic device.

Registration of a mobile electronic device in a server establishes a trust relationship between the mobile electronic device and the server, where the registration provides an establishment of permissions for sharing data upon other mobile electronic devices registered in the same server based on a shared characteristic of the mobile electronic devices. An example of a trust relationship between a mobile wireless device registered as a client of a wireless server is provided with respect to the discussion of FIGS. **1-5**.

FIG. **1** illustrates an embodiment of an architecture for operation of mobile wireless devices registered in a wireless server **105**. Registration in wireless server **105** allows various forms of data to be shared about various mobile wireless devices registered in wireless server **105**. The example architecture includes a wireless server **105** that provides a variety of services to a group **110** of mobile wireless devices. Wireless server **105** includes instrumentality to manage the operation of group **110** of mobile wireless devices under a common criterion or a common set of criteria associated with the registration of these mobile wireless devices in server **105**.

Wireless server **105** can control dissemination of data among group **110**. In some instances, the data may be shared between one or more of the mobile wireless devices in group **110**. In some instances, the information may be shared to less than all the mobile wireless devices in group **110**. A privacy status may be used to maintain and regulate the privacy of the data relative to both members of group **110** and entities external to group **110**. Wireless server **105** can access information sources **115** using interconnection communication facilities **120**. Information sources **115** may include a wide variety of sources that provide informational content in various formats. Information sources **115** may include informational content in an open format without restrictions on what entities may access the informational content. Information sources **115** may include informational content in an open format requiring enrollment by the entities to the informational content without further restrictions. Information sources **115** may include informational content accessible based on a subscription to the informational content. Information sources **115** may include informational content accessible under a privacy condition administered by the corresponding information sources **115**.

Data from the informational sources may include, but is not limited to, photographs, documents, music, video, audio transmissions, e-mail, messages, telephonic communications, personalized data, computational data, operational data, and combinations thereof. Personalized data may

include, but is not limited to, an individual's personal calendar entries, notes, contacts (names, addresses, phone numbers, e-mail address, etc.), memos, and other data personal to an individual. The informational content may be provided in a variety of electronic formats. Such electronic formats may include file formats having extensions that include, but are not limited to, doc, dot, wpd, txt, xls, pdf, ppt, jpg, jpeg, png, bmp, gif html, htm, zip, tif, tiff, wmf, mp3, and wav.

Interconnection communications facilities **120** may include one or more communication networks that allow transfer of data among wireless server **105**, group **110** of mobile wireless devices, information sources **115**, and other communication entities accessible in conjunction with interconnection communications facilities **120**. Interconnection communications facilities **120** may be configured as a local area network, a wide area network, or combinations thereof. In addition, interconnection communications facilities **120** may be configured to include a private network. Interconnection communications facilities **120** may be realized using one or more transmission media. Such transmission media may include one or more of fiber optics, wired pairs, cable, or wireless media. In an embodiment, wireless server **105** and members of the group **110** of mobile wireless devices may communicate directly without using interconnection communication facilities **120**. Interconnection communications facilities **120** allow communication between wireless server **105** and members of group **110** in a wireless infrastructure that includes mobile wireless devices that do not share a common criterion or a common set of criteria with the wireless server **105** and members of group **110**, but use the same wireless infrastructure or at least portions of the same wireless infrastructure.

In an embodiment, wireless server **105** and group **110** of mobile wireless devices have an intrinsic relationship from registration of group **110** of mobile wireless devices such that wireless server **105** operates in large part based on the intrinsic relationship with group **110**. The intrinsic relationship may be used to define a share group. A share group is two or more entities that share information in which the entities have a trusted relationship. The trusted relationship may be directed to and held by one of the entities of the group. Wireless server **105** may be realized as software for integration into a machine that provides simplified operation of the machine around the core of group **110**. Group **110** may be defined by a set of people having a common relationship implementable in wireless server **105**. The set of people may range from one to thousands. For group **110** of mobile wireless devices, the intrinsic relationship may be generated by a common use of wireless server **105** in which wireless server **105** shares information among the members of group based on a unique identifier of a user group **110** being a user of wireless server **105**. The relationship may be initiated by installing unique identifiers of each member in a storage medium of wireless server **105** as a registration of the members to create a share group.

In an embodiment, communications between a mobile wireless device of group **110** and wireless server **105** can be conducted over a secure communication channel. The secure communication channel may be correlated to the unique identification that establishes the group relationship of the wireless mobile device to the share group of wireless server **105**. Wireless server **105** may communicate with the mobile wireless clients over a wireless channel that is secured. The secure channel can be provided using encrypted data for security. In an embodiment, the data may be encrypted using the advanced encryption standard (AES).

In various embodiments, wireless server **105** can be realized as group software installable on an existing machine having a controller, such as one or more processors, and machine-readable medium, such as a non-transitory machine-readable storage medium, to store the instructions of the group software. In some embodiments, wireless server **105** can be realized as a system having hardware and software to execute the functions for the share group defined by wireless server **105** and group **110** of mobile wireless devices. In various embodiments, a simplified user interface (UI) may be provided to execute and operate the group software of wireless server **105**.

In various embodiments, wireless server **105** can be used to implement services from a network provider. A network provider provides a user with access to a communication network and typically provides access to information services associated with the provided access to a communication network. Wireless server **105** may be associated with multiple network providers dependent upon the network provider services to which the registered users of wireless server **105** have entered agreements. Wireless server **105** can be in a client-server relationships with a variety of systems and devices, including mobile wireless devices of group **110** and web-based clients. Wireless server **105** serves as a staging area for the dissemination of informational content to one or more mobile wireless clients of a share group of wireless server **105**.

Wireless server **105** and mobile wireless devices **110** can operate as a share group having secured communication and secured sharing by means of wireless server **105**. Wireless server **105** includes a list of identifiers that uniquely identifies each mobile wireless device of group **110** as clients belonging to a user that is also a user of wireless server **105**. Establishing the unique identifiers in wireless server **105** and each corresponding mobile wireless device **110** can define the trust relationship for the share group. The identities of each of the mobile wireless clients may be correlated to its secure remote password (SRP) key. The SRP key may be used for authentication when connecting to a wireless network. The SRP key provides a unique identifier for wireless server **105** and may indicate usage of a secure channel. The SRP keys may be used for registering the wireless server **105** and determining that wireless server **105** has a unique relationship with a wireless client to communicate with a network infrastructure. SRP key also allows an identification of a mobile wireless device as a client of wireless server **105** over a direct plug-in channel or an unsecured Wi-Fi channel. A SRP key can be implemented in any acceptable manner depending on the security needs of the situation. The implementation may range from simple combinations, such as the current date and time, to the use of complex cryptographic algorithms. Simple implementations may be used in environments that are very benign with respect to security. When security concerns are high, complex cryptographic algorithms may be used. Various combinations of security measures may be implemented with the SRP key.

The share group may have several levels for a privacy state. The privacy state may include, but is not limited to, a status as being owned by one user associated with one of mobile wireless devices of group **110**, a status as being shared among two or more of mobile wireless clients of group **110** but less than all the mobile wireless devices, a status as being shared among all of mobile wireless devices of group **110**, and a status as being shared or accessible by entities outside the group of mobile wireless devices of group **110** in addition to being shared among all of mobile wireless devices **110**. A status as being shared or accessible by entities outside the group of mobile wireless clients **110** may include specified entities permitted accessibility.

FIG. **2** depicts an embodiment of a wireless architecture in which a relationship between mobile wireless devices as clients of multiple wireless servers is illustrated. Wireless server **205-1** provides wireless services, similar to those services discussed with respect to wireless server **105** of FIG. **1**, to the group of mobile wireless devices **210-1**, **210-2** . . . **210**-N as a primary wireless server for the group. Members of the group may individually belong to another group associated with another wireless server, in which such a wireless server is secondary wireless server. For example, wireless servers **205-2**, **205-3**, and **205-4** are configured to groups **207**, **208**, and **209**, respectively. Group **207** includes mobile wireless devices **211-1**, **211-2**, and **211-3**. Group **208** includes mobile wireless devices **212-1**, **212-2**, **212-3**, and **212-4**. Group **209** includes mobile wireless devices **213-1** and **213-2**. Mobile wireless device **210**-N may also belong to group **207** in which case wireless server. **205-2** is a secondary wireless server for mobile wireless device **210**-N. Mobile wireless device **210-2** may also belong to group **208** in which case wireless server **105-3** is a secondary wireless server for mobile wireless device **210-2**. Mobile wireless device **210-1** may also belong to group **209** in which case wireless server **205-4** is a secondary wireless server for mobile wireless device **210-1**. In an embodiment, a mobile wireless client can be assigned to a primary wireless server as a group member and can be assigned, as a group member, to multiple secondary wireless servers.

In an embodiment, the functioning of a mobile wireless client with a primary wireless server and with one or more secondary wireless servers can be controlled by the policies of the wireless servers, where the policies of the primary wireless server dominate the policies of the secondary wireless servers. The assignment of a primary wireless server may include a negotiation in which the user of the mobile wireless client agrees to make a specific wireless server its primary wireless server in return for assignment to the group of the specific wireless server. Such negotiation may result in termination of some service features provided by the wireless servers upon the identification of these wireless servers as being secondary. Due to conflicts between wireless servers, a mobile wireless device may be limited in the number of secondary wireless server groups to which it belongs as a registered client.

For pairs of mobile wireless devices in an architecture in which the mobile wireless devices are not registered in the same server, informational content can be transferred between the two mobile wireless devices using directed transmission between servers. The transfer is based on a trust relationship between the two mobile wireless devices. In various embodiments, one of the mobile wireless devices can be registered in one server and the other mobile wireless device can be registered in the other server.

FIG. **3** illustrates a block diagram of features of an architecture for mobile wireless devices **310** registered in a wireless server **305**, according to various embodiments. The architecture includes a local PC **305** arranged as a wireless server for mobile wireless devices **310** such that the registered mobile wireless devices **310** are clients of local PC **305**. Local PC **305** can be configured as a wireless server using software and supporting hardware, where local PC **305** can be realized as a home wireless server or as a small office/home office (SOHO) wireless server. As a home wireless server, local PC **305** provides a mechanism for a family to share informational content and manage operation of mobile wireless devices **310** of the family. As a small office/home office (SOHO) wireless server, local PC **305** provides a mechanism for members of a small business to share business information, which can be provided in a number of different formats, and manage operation of the small business related activities of mobile wireless devices **310**.

Mobile wireless devices **310** can be registered in local PC **305** such that mobile wireless devices **310** share various forms of information with each other based on and through registration in local PC **305**. Each mobile wireless device is registered on a unique basis with respect to the other mobile wireless devices **310** registered in local PC **305**. Local PC **305** includes a list of identifiers that uniquely identifies each of the mobile wireless devices **310** as belonging to a user that is also a user of local PC **305**. The identities of each of mobile wireless devices **310** may be correlated to its secure remote password key. The SRP key may be used for authentication when connecting to a wireless network, such as via cellular network **312**, where each of mobile wireless devices **310** can operate with local PC **305** over a secured communication channel that is automatically established in initiating a communication session.

The SRP key provides a unique identifier for local PC **305** and may also indicate usage of a secure channel. The SRP keys may be used for registering local PC **305** and determining that local PC **305** has a unique relationship with a mobile wireless device to communicate with a network infrastructure. A SRP key also allows an identification of a mobile wireless device with local PC **305** over a direct plug-in channel, such as universal serial bus (USB) cable **314**, or a secured or an unsecured Wi-Fi channel **316**. A SRP key can be implemented in any acceptable manner depending on the security needs of the situation. The implementation may range from simple combinations, such as the current date and time, to the use of complex cryptographic algorithms. Simple implementations may be used in environments that are very benign with respect to security. When security concerns are high, complex cryptographic algorithms may be used. Various combinations of security measures may be implemented with the SRP key.

Based on the registration, local PC **305** can act as an administrator for mobile wireless devices **310** registered in local PC **305** to provide managerial functions for mobile wireless devices **310** as a single unique group. Among mobile wireless devices **310**, local PC **305** can manage: file transfer folders **307**; access to third party applications **309**, which may be performed by various combinations of hyper text transfer protocol (http) and hyper text transfer protocol secure (https) or other mechanisms; access to an internet service provider (ISP) **313** for internet message access protocol (IMAP) mail accounts/a post office protocol (POP) system accounts/google mail (GMAIL) accounts, or other e-mail accounts; access to web servers **311**, and access to locally controlled devices to the home/SOHO such as, but not limited to, local folders **306-1**, camera **306-2** or home/SOHO monitoring equipment, . . . DVRs (digital video recorders) **306**-N or other home/SOHO media equipment.

Informational content, which may be shared among mobile wireless devices **310**, can include, but is not limited to, photographs, documents, music, video, audio transmissions, e-mail, messages, telephonic communications, personalized data, computational data, operational data, and combinations thereof. Personalized data may include, but is not limited to, an individual's personal calendar entries, notes, contacts (names, addresses, phone numbers, e-mail address, etc.), memos, and other data personal to an individual. The informational content may be provided in a variety of electronic formats. Such electronic formats may include file formats having extensions that include, but are not limited to, doc, dot, wpd, txt, xls, pdf, ppt, jpg, jpeg, png, bmp, gif, html, htm, zip, tif, tiff, wmf, mp3, and wav.

The sharing of information among mobile wireless devices controlled by local PC **305** may have several levels for a privacy state. The privacy state may include, but is not limited to, a status as being owned by one user associated with one of mobile wireless devices **310**, a status as being shared among two or more of mobile wireless devices **310** but less than all mobile wireless devices **310**, a status as being shared among all of mobile wireless devices **310**, and a status as being shared or accessible by entities outside the group of mobile wireless devices **310** in addition to being shared among all of mobile wireless devices **310**. A status as being shared or accessible by entities outside the group of mobile wireless devices **310** may include specified entities permitted accessibility.

Local PC **305** can be configured to regulate various flows of informational content and the management of the mobile wireless devices **310** on an autonomous basis according to profiles established in local PC **305** for various ones of mobile wireless devices **310**. The profiles can be established according to various policies that control not only the flow of informational content shared among the mobile wireless devices **310**, but also the use of individual wireless devices of the group of mobile wireless devices. For instance, with a local home PC **305** configured as a wireless server for mobile wireless devices **310** of family members, the policies can regulate flow of e-mail messages, instant messaging communications, page messages, text communications, and/or telephonic calls of the family. The administrator for such a local home PC **305** can be correlated to one or more of mobile wireless devices **310** assigned to one or more parents. The parents can set the management parameters individually for each of mobile wireless devices **310** of the family directly on local home PC **305** or using a mobile wireless device designated as an administrator to set the parameters in local home PC **305**. In a similar manner, an administrator for a SOHO can be correlated to a particular mobile wireless device associated with the manager of the SOHO.

Local PC **305** can provide synchronization of the transfer of informational content among the mobile wireless devices **310**. Given a profile established in local PC **305**, the acquisition of informational content in local PC **305** can automatically generate a linkage of the informational content to various folders that provide access to the folder content by select ones of mobile wireless devices **310**. In addition, users of mobile wireless devices **310** can browse the content of local PC **305** using a browser on mobile wireless devices **310**. Users of mobile wireless devices **310** can also conduct web browsing through web servers **311** accessed through local PC **305**.

The architecture of FIG. **3** includes a local PC **305** arranged as a wireless server for mobile wireless devices **310**, with connectivity to wired networks **320**, **321**, **322**. Wired networks **320**, **321**, **322** can be arranged as individual networks. Wired networks **320**, **321**, **322** can be arranged as a network of interconnected computer networks that interchange data using a standardized protocol. Such a network may include the Internet.

A mobile wireless device in the group of mobile wireless devices **310** can also be registered in a business server **345**, separate from local PC **305**, in which the mobile wireless device communicates with business server **345** over cellular network **340**. Interaction of the mobile wireless device and business server **345** can be regulated under policies associated with business server **345**. For the given mobile wireless device, one of the sets of policies associated with local PC **305** and business server **345** may function as the dominant policy for operating the given mobile wireless device. The status of a dominate policy can be changed between the two sets of policies.

Mobile wireless devices **310** can exchange operational parameters and informational content with local PC **305** over various mediums. A communication session between local PC **305** and one or more of mobile wireless device **310** can be conducted over cellular network **312**. A communication session between local PC **305** and an individual mobile wireless device **310** can be conducted USB cable **314**. A communication session between local PC **305** and one or more of mobile wireless device **310** can be conducted over a Wi-Fi network **316**. Wi-Fi network **316** may be a home Wi-Fi network. Wi-Fi network **316** may be a Wi-Fi network coupled to the Internet, where such a Wi-Fi network can be accessed by a mobile wireless device.

FIGS. **4**A and **4**B illustrate a block diagram of features of an architecture for mobile wireless devices registered in different wireless servers. In various embodiments, mobile wireless devices **410** are registered in local PC **405** according to a share arrangement among the wireless devices **410** and local PC **405**. Local PC **405** can be configured as a wireless server arranged as a home wireless server or a SOHO wireless server, for example. The arrangement of mobile wireless devices **410** and local PC **405** can be implemented with the functions and characteristics similar to or identical to the functional arrangement of mobile wireless devices **310** and local PC **305** as discussed with respect to the architecture of FIG. **3**.

For example, based on the registration, local PC **405** can act as an administrator for mobile wireless devices **410** registered in local PC **405** to provide managerial functions for mobile wireless devices **410** as a single unique group. Among mobile wireless devices **410**, local PC **405** can manage: file transfer folders **407**; access to third party applications **409**, which may be performed by various combinations of hyper text transfer protocol (http) and hyper text transfer protocol secure (https) or other mechanisms; access to an internet service provider (ISP) **413** for internet message access protocol (IMAP) mail accounts/a post office protocol (POP) system accounts/google mail (GMAIL) accounts, or other e-mail accounts; access to web servers **411**, and access to locally controlled devices to the home/SOHO such as, but not limited to, local folders **406-1**, camera **406-2** or home/SOHO monitoring equipment, . . . DVRs (digital video recorders) **406**-N or other home/SOHO media equipment.

In addition, the architecture of FIGS. **4**A and **4**B includes local PC **405** arranged as a wireless server for mobile wireless devices **410**, with connectivity to wired networks **420-1**, **421-1**, **422-1**, and **423**. Wired networks **420-1**, **421-1**, **422-1**, and **423** can be arranged as individual networks. Wired networks **420-1**, **421-1**, **422-1**, and **423** can be arranged as a network of interconnected computer networks that interchange data using a standardized protocol. Such a network may include the Internet. Via cellular network **440**, a mobile wireless device in the group of mobile wireless devices **410** can also be registered in a business server **445**, separate from local PC **405**.

Mobile wireless devices **410** can exchange operational parameters and informational content with local PC **405** over various mediums. A communication session between local PC **405** and one or more of mobile wireless device **410** can be conducted over cellular network **412**. A communication session between local PC **405** and an individual mobile wireless device **410** can be conducted using USB cable **414**. A communication session between local PC **405** and one or more of mobile wireless device **410** can be conducted over a Wi-Fi

network **416**. Wi-Fi network **416** may be a home Wi-Fi network. Wi-Fi network **416** may be a Wi-Fi network coupled to the Internet, where such a Wi-Fi network can be accessed by a mobile wireless device.

Mobile wireless devices **430** are registered in local PC **425** according to a share arrangement among the wireless devices **430** and local PC **425**. Local PC **425** can be configured as a wireless server arranged as a home wireless server or a SOHO wireless server, for example. The arrangement of mobile wireless devices **430** and local PC **425** can be realized to have the functions and characteristics similar to or identical to the functional arrangement of mobile wireless devices **310** and local PC **305** as discussed with respect to the architecture of FIG. **3**.

For example, based on the registration, local PC **425** can act as an administrator for mobile wireless devices **430** registered in local PC **425** to provide managerial functions for mobile wireless devices **430** as a single unique group. Among mobile wireless devices **430**, local PC **425** can manage: file transfer folders **427**; access to third party applications **429**, which may be performed by various combinations of hyper text transfer protocol (http) and hyper text transfer protocol secure (https) or other mechanisms; access to an internet service provider (ISP) **423** for internet message access protocol (IMAP) mail accounts/a post office protocol (POP) system accounts/google mail (GMAIL) accounts, or other e-mail accounts; access to web servers **421**, and access to locally controlled devices to the home/SOHO such as, but not limited to, local folders **426-1**, camera **426-2** or home/SOHO monitoring equipment, . . . DVRs (digital video recorders) **426**-N or other home/SOHO media equipment.

In addition, the architecture of FIGS. **4**A and **4**B includes local PC **425** arranged as a wireless server for mobile wireless devices **430**, with connectivity to wired networks **420-2**, **421-2**, **422-2**, and **423**. Wired networks **420-2**, **421-2**, **422-2**, and **423** can be arranged as individual networks. Wired networks **420-2**, **421-2**, and **422-2** may be common to respective wired networks **420-1**, **421-1**, and **422-1**. Wired networks **420-2**, **421-2**, **422-2**, and **423** can be arranged as a network of interconnected computer networks that interchange data using a standardized protocol. Such a network may include the Internet. Via cellular network **460**, a mobile wireless device in the group of mobile wireless devices **430** can also be registered in a business server **465**, separate from local PC **425**.

Mobile wireless devices **430** can exchange operational parameters and informational content with local PC **425** over various mediums. A communication session between local PC **425** and one or more of mobile wireless device **430** can be conducted over cellular network **432**. A communication session between local PC **425** and an individual mobile wireless device **430** can be conducted using USB cable **434**. A communication session between local PC **405** and one or more of mobile wireless device **410** can be conducted over a Wi-Fi network **436**. Wi-Fi network **436** may be a home Wi-Fi network. Wi-Fi network **436** may be a Wi-Fi network coupled to the Internet, where such a Wi-Fi network can be accessed by a mobile wireless device.

In various embodiments, one or more of mobile wireless devices **410** are not registered in local PC **425** and one or more of mobile wireless devices **430** are not registered in local PC **405**. However, informational content can be shared between two mobile wireless devices that are not registered with a share arrangement in the same local wireless server. The informational content can be shared using the registration arrangement of each mobile wireless device with its own local PC with transfer of the informational content provided by directed communication between the corresponding local PCs. For example, a mobile wireless device of the group **410** can share informational content with a mobile wireless device of the group **430** by initiating transfer of the informational content from local PC **405** to local PC **425** over network **423**, where at local PC **425** the informational content is available to the mobile wireless device of the group **430** based on its profile in local PC **425**. In a similar manner, a mobile wireless device of the group **430** can share informational content with a mobile wireless device of the group **410**. With network **423** being the internet, the transfer can be conducted in a cost efficient, time efficient convenient manner.

FIG. **5** illustrates a block diagram of features of an architecture arranged for device-to-device transferal of informational content, according to various embodiments. Architecture **500** shows mobile electronic device **510** interrelated with server **505** and mobile electronic device **530** interrelated with server **525**. The interrelation of server **505** with mobile electronic device **510** can include the registration of mobile electronic device **510** in server **505** as a client of server **505**. The interrelation of server **525** with mobile electronic device **530** can include the registration of mobile electronic device **530** in server **525** as a client of server **525**. The registration relationship between a mobile electronic device and its server allows a user of the mobile electronic device to manage properties of the mobile electronic device through accessing and operating applications on the server. Such a server can be configured in a PC to provide enhanced user control of its registered mobile electronic devices. The registration relationship also allows a user of a mobile electronic device to access applications, data, and informational content on the server or through the server in which it is registered. In various embodiments, mobile electronic devices **510** and **530** are mobile wireless devices and servers **505** and **525** are wireless servers.

Servers **505** and **525** can engage in a directed transmission via network **520**. By directed transmission of two servers, it is meant that the two servers establish communication with each other such that the two servers are parties to the transmission rather than being effectively only passive relays. Network **520** can be a local area network, a wide area network, or combinations thereof. Servers **505** and **525** may use the Internet as network **520**. Using directed transmission, such as through the Internet, the transfer process can be streamlined. This streamlining mechanism allows the transferal process to be completed without using e-mail transferal or Bluetooth transferal. Bluetooth transferal is only available when both parties are available and in close proximity. Email transferal includes application of a user's data plan and may include performing the download at a time that may not be convenient.

The capability of directed transmission between servers **505** and **525** and the registration relationship of mobile electronic device **510** with server **505** and mobile electronic device **530** with server **525** provides an efficient mechanism for managing the transferal of informational content between mobile electronic device **510** and mobile electronic device **530**. The transferal management can be regulated such that the time of transmission can be leveraged with transmission method. This leverage allows for the combined enhancement of speed of access to data, the reduction of financial cost, and the flexibility of access to the information. The transmission methods can be analyzed with respect to transmission mechanisms to move data off and onto a mobile electronic device, where the transmission mechanisms include, but are not limited to, cellular wireless, Wi-Fi, and USB (Universal Serial Bus). Typically, cellular wireless includes a wide area wireless network and Wi-Fi includes a local area wireless network. USB is a serial bus standard to interface devices. A USB connection, for example, can interface a device with a

computer. A USB mechanism can be realized as a wired connection or as a wireless connection over relatively short distances.

Selection of the transport from the mobile electronic device based on the data size of the informational content provides for leveraged management of data transferal. The rate of transfer increases going from the cellular wireless mechanism to the Wi-Fi mechanism to the USB mechanism. With respect to cost, data transmission is typically cheaper for USB transferal than for cellular wireless transferal. Additionally, data transmission is typically cheaper over a Wi-Fi mechanism than over cellular wireless, where the cost of a cellular wireless transmission may be a function of a data plan from the service provider for the cellular wireless network. Typically, cellular wireless, Wi-Fi, and USB, provide for decreasing financial cost in the order listed. However, data transferal data to a mobile electronic device from its associated server via USB lacks flexibility, since such transferal is accomplished with the mobile electronic device near to the server. A Wi-Fi mechanism provides additional freedom of operation, but transferal is based on proximity to access point of the Wi-Fi network. Cellular wireless provides the most flexibility when in a region of cellular coverage.

In various embodiments, a user of a mobile electronic device can set certain preferred times of transfer or criteria for transfer based on the registration relationship with its associated server such that transmission time can be leveraged with transmission method to take into account one or more variations in speed of transmission, flexibility, cost, and cost among the modes of transmission. A user can set a particular time of day for transferal from the user's mobile electronic device to one of its corresponding servers in which the mobile electronic device is registered. For example, a particular time can be set based on the user's perceived knowledge how the time of day affects transmission, based on relative costs associated with the mode of transmission, and based on the user's priority for making the transferal.

In various embodiments, a variety of factors for transferal of informational content can be analyzed in a server such as server **505** or server **525**. Such factors may include the data size of informational content to be transferred, the modes of transmission available between the server and its mobile electronic device, the speed of the transferal relative to data size, the cost associated with the mode of transmission, user preferences, and the priority assigned to the transferal of the informational content from the mobile electronic device to another mobile electronic device registered in another server to which directed transmission can be facilitated. The result of the analysis in the server can be sent from the server to its registered mobile electronic device, where the analysis can include a recommended time as the relative best time to perform the transfer from the electronic mobile device to its associated server. For example, based on a matrix of costs for each transmission option the server can select the lowest cost mechanism. The matrix of costs can be stored on the server and updated with changes to the parameters in the matrix. Alternatively, depending on the urgency/priority of a download and the cost of transfer, the server may generate a recommendation of a specific time at which to download informational content to the mobile electronic device or upload informational content from mobile electronic device to the server. For example, if informational content is identified as being urgent, the download can be made while in cellular wireless coverage regardless of the cost. In another instance, if the file transfer is not urgent, transferal could potentially wait until the electronic device is within a Wi-Fi access point or at the server for USB transferal.

In various embodiments, a set of transferal-related parameters can be analyzed for transfer of informational content between mobile electronic device **510** and mobile electronic device **530** using directed transmission between server **505** and server **525** taking parameters for each apparatus into consideration. The analysis can provide for a relatively low cost, fastest, just-in-time transfer between mobile electronic device **510** and mobile electronic device **530** by providing a relative local optimization between the four elements: mobile electronic device **510**, server **505**, server **525**, and mobile electronic device **530**. Such a process can include analyzing characteristics of the transfer with respect to three transfer segments. The three transfer segments can be partitioned as a segment transferring the informational content from the mobile electronic device **510** to server **505**, a segment transferring the informational content from server **505** to server **525**, a segment transferring the informational content from server **525** to mobile electronic device **530**. Transfer initiation for a transfer segment of the three transfer segments can be scheduled based on criteria that include transfer characteristics of the transfer segment or user preference or both transfer segment and user preference.

Scheduling transferal for the segment transferring the informational content from mobile electronic device **510** to server **505** can be based on an analysis of parameters including modes of transmission from mobile electronic device **510** to server **505**, a data size of the informational content, a correlation between data size and speed of transfer for each mode of transmission, user preference, and a priority for the transfer of the informational content from mobile electronic device **510** to mobile electronic device **530**. Likewise, scheduling transferal for the segment transferring the informational content from server **525** to mobile electronic device **530** can be based on an analysis of parameters including modes of transmission from server **525** to mobile electronic device **530**, a data size of the informational content, a correlation between data size and speed of transfer for each mode of transmission, user preference, and a priority for the transfer of the informational content from mobile electronic device **510** to mobile electronic device **530**.

Scheduling transferal for the segment transferring the informational content from server **505** to server **525** can be based the available networks that can be used as network **520**. Using the Internet as network **520**, transmission costs associated with wireless network providers can be avoided. In addition, use of the Internet should essentially not incur speed penalties.

The analysis of these three segments for the transfer of the informational content can provide parameters that can be set to reduce the time that a service sends the informational content. The analysis can also provide parameters that can be set to substantially reduce bandwidth charges for one or more of the individuals corresponding to the transfer.

Given two mobile electronic devices, connected to two servers in a trust relationship, a trust relationship between each mobile electronic device and its corresponding server enables a cost effective mechanism for transferring data, files, media, or various combinations thereof to and from each mobile electronic device and between the mobile electronic devices. Data transferal between mobile electronic devices using transferal between their corresponding servers can use a communication medium that has periodic flat rate costs, such as flat rate monthly Internet charges. The use of such a communication medium allows for the avoidance of relatively expensive data plan charges of wireless service provid-

ers. Furthermore, the use of the two servers allows users to schedule when they want to upload data and when they want to download data.

In an example embodiment, using the example devices of FIG. **5**, one or more files are marked in mobile electronic device **510** for transferal to mobile electronic device **530**. Marking of these files can be realized in various ways. These files for transferal may be stored on mobile electronic device **510** and flagged for transferal. These files for transferal may be stored on server **505** in which mobile electronic device **510** is registered with identification of these files in a listing stored in mobile electronic device **510**, where the files to be transferred are flagged in the listing in mobile electronic device **510**. These files for transferal may be stored on server **505** and flagged in server **505** from mobile electronic device **510** during a browse of server **505** conducted using mobile electronic device **510**.

Selection of mobile electronic device **530** as the destination user can be realized by selecting the destination user in an address book of mobile electronic device **510**. A user interface of mobile electronic device **510** can provide the address book in terms of mobile electronic device identities or in terms of the names or other identifications of the users of the mobile electronic device. A database of mobile electronic device **510** can be used to correlate the mobile electronic devices and corresponding users for the address book. Once the destination user is selected, a personal identification number (PIN) of the destination user's device is accessed from the database of mobile electronic device **510**. The PIN is used to uniquely identify the destination user's device and can be maintained as a secret shared between mobile electronic device **510** and mobile electronic device **530**. The unique identification is not limited to numerics but may include other forms of identification that can be electronically stored such as alphabetic characters and alphanumeric representations. These unique identifications may also be stored in servers **505** and **525** that are in a trust relationship with mobile electronic devices **510** and **530**.

Based on a profile setting on server **505** in which the sending mobile electronic device, which in this example is mobile electronic device **505**, is registered, the upload of the one or more files from mobile electronic device **510** to server **505** can be selected to occur when mobile electronic device **510** is connected to server **505** via USB, via Wi-Fi, or via Cellular. On mobile electronic device **510**, after actuating an indication for transfer, such as "clicking send" to send the files, the transmission of the files is queued until the selected connection is available. In addition, the profile can include a time-based setting such as, for example, only upload after 6 pm, which may correspond to the time when cheaper data rates begin for the mode of transmission selected. The upload can be scheduled based on the transmission medium to be used, such as USB, Wi-Fi, or cellular wireless, for example.

Once the one or more files are uploaded from mobile electronic device **510** to server **505**, the files can be sent over the internet to server **525**. Upon arrival of the files at server **525**, a notification, for example an email notification, can be sent to the intended recipient mobile electronic device, which in this example is mobile electronic device **530**, to inform the user of mobile electronic device **530** that there are one or more files waiting for the user in server **525**. Based on the profile settings for mobile electronic device **530**, which can be stored in server **525**, the one or more files can be downloaded from server **525** to mobile electronic device **530**. The parameters that can be set in the profile for mobile electronic device **530** can be similar to the profile settings for mobile electronic device **510**. The settings for the parameters for mobile electronic device **530** may vary with respect to the settings for the parameters for mobile electronic device **510**, since these devices have share relationships with different servers and the policies for mobile electronic devices associated with these different servers may differ. For example, while the profile settings for mobile electronic device **510** may provide for transferring a set of files to mobile electronic device **530**, the profile settings for mobile electronic device **530** may provide for downloading only a portion of the transferred set from server **525** to mobile electronic device **530**. The download can be scheduled based on the transmission medium to be used, such as USB, Wi-Fi, or cellular wireless, for example.

FIG. **6** shows a block diagram of features of an embodiment of a server **605** that can be used in architectures similar to the architecture of FIGS. **4**A and **4**B and architecture **500** of FIG. **5**. Server **605** can include one or more processors **606**, memory **607** operatively coupled to one or more processors **606**, and a network interface **608**. Memory **607** can be configured to store instructions to engage in a transfer of informational content between a first mobile electronic device and a second mobile electronic device using directed transmission between server **605** and another server. The first mobile electronic device can be registered in server **605** as a client of server **605** and the second mobile electronic device can be registered as a client of the other server. Memory **607** is a form of machine-readable medium that stores instructions. Memory **607** is not limited to any type of machine-readable medium. Network interface **608** is arranged to operatively couple to a network to implement at least directed transmission with the other server. Network interface **608** can be configured to be operable with the Internet to conduct directed transmission to and from the other server.

In various embodiments, server **605** includes a machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by server **605**, cause server **605** to operate as the first server associated with initiating a transfer of informational content from a transferring mobile electronic device. In addition, server **605** includes a machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by server **605**, cause server **605** to operate as the second server associated with a mobile electronic device that is the recipient of a transfer of informational content. Alternatively, server **605** may include machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by server **605**, cause server **605** to operate as the first server or the second server.

FIG. **7** shows a block diagram of features of an embodiment of a mobile electronic **710** that can be used in architectures similar to the architecture of FIGS. **4**A and **4**B and architecture **500** of FIG. **5**. Mobile electronic device **710** can include one or more processors **711**, memory **712** responsive to the one or more processors **711**, and a transmission interface **713**. Memory **712** can be arranged to store instructions to engage in a transfer of informational content with another mobile electronic device using directed transmission between a first server and a second server. Mobile electronic device **710** can be registered in the first server as a client of the first server and the other mobile electronic device can be registered as a client of the second server. Memory **712** is not limited to any type of machine-readable medium. Transmission interface **713** is a responsive to execution of the instructions stored in memory **712** to transmit the informational content. Transmission interface **713** can be configured to be compatible with one of more modes of transmission selected from of cellular wireless **716**, Wi-Fi **717**, and USB **718**.

In various embodiments, mobile electronic device **710** includes a machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by mobile electronic device **710**, cause mobile electronic device **710** to operate as a mobile electronic device **710** that initiates transfer of the informational content. In addition, mobile electronic device **710** includes a machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by mobile electronic device **710**, cause mobile electronic device **710** to operate as a mobile electronic device **710** that is the recipient of the informational content. Alternatively, mobile electronic device **710** may include machine-readable medium, such as a non-transitory machine-readable storage medium, that stores instructions, which when performed by mobile electronic device **710**, cause mobile electronic device **710** to operate as the transferring mobile electronic device or the receiving mobile electronic device.

FIG. **8** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments. These features illustrate operations of a mobile electronic devices initiating the transfer.

At **810**, informational content is selected in the first mobile electronic device for transfer to a second mobile electronic device. The selection of informational content can include select of informational content that resides on the first mobile electronic device. Alternatively, the selection of informational content can include selection of informational content that resides on a first server in which the first mobile electronic device is registered. Selection of informational content in the first server can be realized by browsing the first server from the first mobile electronic device and selecting the informational content in the first server. The selection of the informational content in the first server can also be recorded in the first mobile electronic device. The selection of the identification of the informational content can be recorded in the first mobile electronic device and sent to the first server.

At **820**, a unique identifier of the second mobile electronic device is determined in the first mobile electronic device. The unique identifier is associated with transfers from the first mobile electronic device to the second mobile electronic device. In various embodiments, the unique identifier of the identified second mobile electronic device is maintained in a database. Data with respect to the second mobile electronic device maintained in a database of the first mobile electronic device may include, but is not limited to, identification of the user of second mobile electronic device as a trusted user such that transferals are unlimited or as a restricted user with whom to transfer informational content. Alternatively, the unique identifier of a selected recipient and the set of properties associated with the selected recipient can be maintained in the first server.

At **830**, the unique identifier is sent from the first mobile electronic device to a first server to transfer of the informational content from the first server to a second server associated with the second mobile electronic device. The first mobile electronic device can be registered in the first server as a client of the first server and the second mobile electronic device can be registered in the second server as a client of the second server. If the unique identifier of the second mobile electronic device is stored in the first server related to a name of the second mobile electronic device or other similar identification, the name of the second mobile electronic device can be sent to the first server and the first server can determine the unique identifier of the second mobile electronic device.

At **840**, the informational content is transmitted from the first mobile electronic device to the first server. Initiating transfer of the informational content to the first server can be based on criteria for transmission from the first mobile electronic device to the first server. The criteria can be based on a correlation between time of transmission and an analysis of one or more parameters of a parameter set, where the parameter set includes modes of transmission and a data size for transferring the informational content. Other parameters can include a priority for the transfer of the informational content from the first mobile electronic device to the second mobile electronic device, and user preference. The correlation and the analysis can be performed in the first mobile electronic device. Alternatively, the correlation and the analysis can be performed in the first server with the results sent to the first mobile electronic device. Initiating the transfer of the informational content can be based on a time set by a user of the first mobile electronic device. Parameters may be set to limit how far in the future to which the time for initiating transfer can be set.

In various embodiments, with the informational content on the first server, only the identity of the informational content is transmitted to the first server or selected in the first server. With the content local to the first server, the upload from the first mobile electronic device can be avoided providing savings in time for transmission to the first server and possible savings of the cost of transmission.

The various operations performed by the first mobile electron device can be performed by execution of instructions stored in a machine-readable medium. The form of machine-readable medium is not limited to any one type of machine-readable medium, but can be any machine-readable medium, such as a non-transitory machine-readable storage medium, that can be implemented in a mobile electronic device. Such a mobile electronic device can be configured similar to the mobile electronic devices discussed with respect to FIGS. **1-5**, **7**, and **8-13**.

FIG. **9** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments. The features illustrate operations of a server associated with the mobile electronic device initiating the transfer. The mobile electronic device can be registered in the server.

At **910**, informational content is received in a first server from a first mobile electronic device. The first mobile electronic device can be registered as a client in the first server. Receiving the informational content in the first server from the first mobile electronic device can be based on criteria for transmission from the first mobile electronic device to the first server. The criteria can include a correlation between time of transmission and an analysis of one or more parameters of a parameter set. The parameter set can include modes of transmission and a data size for transferring the informational content. The modes of transmission can include one or more of cellular wireless, Wi-Fi, USB, or other modes of transmission. Other parameters can include a priority for the transfer of the informational content from the first mobile electronic device to the second mobile electronic device, and user preference.

Prior to receiving the informational content, the criteria for transmission from the first mobile electronic device to the first server can be analyzed in the first server. Based on the analysis of the criteria, a recommended time for sending the informational content to the first server from the first mobile electronic device can be determined. This recommended time can be sent to the first mobile electronic device. The user of the

first mobile electronic device can view the recommended time and accept or reject the recommended time. In various embodiments, the recommended time is set as the default time for initiating transferal unless the recommended time is affirmatively rejected.

At **920**, identification information is received in the first server from the first mobile electronic device. The identification information identifies a second mobile electronic device as being the recipient of the informational content specified for transmission from the first server. The identification information includes a unique identifier of the second mobile electronic device.

At **930**, the informational content is transmitted to a second server associated with the second mobile electronic device. The second mobile electronic device can be registered in the second server. The informational content can be transmitted through a network interface of the first server operable with the Internet. The informational content can be sent over other networks.

Alternatively, the first server can send an identification of the information content to be transferred to the second server. If the second server contains the informational content, the second server can communicate the presence of the information content back to the first server so that the first server can refrain from sending the informational content. The informational content on the second server may belong to a user other than the user of the second mobile electronic device. In such a case, the second server can record the relationship of the informational content with the second mobile electronic device as being from the first mobile electronic device.

The various operations performed by the first server can be performed by execution of instructions stored in a machine-readable medium. The form of machine-readable medium is not limited to any one type of machine-readable medium, but can be any machine-readable medium, such as a non-transitory machine-readable storage medium, that can be implemented in a server. Such a server can be configured similar to the servers discussed with respect to of FIGS. **1-6** and **8-13**.

FIG. **10** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments. The features illustrate operations of a server associated with the mobile electronic device that is the recipient of the transfer. The second mobile electronic device can be registered in the server.

At **1010**, informational content is received in a second server from a first server. The informational content can be received through a network interface of the second server operable with the Internet. The informational content can be received from other networks.

At **1020**, identification information is received in the second server from the first server. The identification information identifies a second mobile electronic device as being the recipient of the informational content, where the transferal of the informational content is initiated by a first mobile electronic device. The first mobile electronic device can be registered as a client in the first server and the second mobile electronic device can be registered as a client in the second server. The identification information includes a unique identifier of the second mobile electronic device.

At **1030**, transmission of the informational content from the second server to the second mobile electronic device is scheduled. The scheduling is based on criteria for transmission from the second server to the second mobile electronic device. The criteria can include a correlation between time of transmission and an analysis of one or more parameters of a parameter set for the second mobile electronic device. The parameter set can include modes of transmission and a data size for transferring the informational content. The modes of transmission can include, but are not limited to, cellular wireless, Wi-Fi, or USB. Other parameters can include a priority for the transfer of the informational content from the first mobile electronic device to the second mobile electronic device, and user preference.

At **1040**, the informational content is transmitted from the second server to the second mobile electronic device according to the scheduling of transmission.

The various operations performed by the second server can be performed by execution of instructions stored in a machine-readable medium. The form of machine-readable medium is not limited to any one type of machine-readable medium, but can be any machine-readable medium, such as a non-transitory machine-readable storage medium, that can be implemented in a server. Such a server can be configured similar to the servers discussed with respect to of FIGS. **1-6** and **8-13**.

FIG. **11** illustrates features of a method for transferring informational content between two mobile electronic devices using directed transmission between two servers, according to various embodiments. The features illustrate operations of a mobile electronic device that is the recipient of the transfer of the informational content.

At **1110**, notification of the arrival of informational content at a second server is received in a second mobile electronic device. The second mobile electronic device is the recipient of the informational content from a first mobile electronic device sent through a first server to the second server. The first mobile electronic device can be registered as a client in the first server and the second mobile electronic device can be registered as a client in the second server.

At **1120**, the informational content is received in the second mobile electronic device from the second server according to a schedule based on criteria for transmission from the second server to the second mobile electronic device. The scheduling is based on criteria for transmission from the second server to the second mobile electronic device. The criteria can include a correlation between time of transmission and an analysis of one or more parameters of a parameter set for the second mobile electronic device. The parameter set can include modes of transmission and a data size for transferring the informational content. The modes of transmission can include, but are not limited to, cellular wireless, Wi-Fi, or USB. Other parameters can include a priority for the transfer of the informational content from the first mobile electronic device to the second mobile electronic device, and user preference.

The various operations performed by the second mobile electron device can be performed by execution of instructions stored in a machine-readable medium. The form of machine-readable medium is not limited to any one type of machine-readable medium, but can be any machine-readable medium, such as a non-transitory machine-readable storage medium, that can be implemented in a mobile electronic device. Such a mobile electronic device can be configured similar to the mobile electronic devices discussed with respect to FIGS. **1-5**, **7**, and **8-13**.

FIG. **12** illustrates a representation of features of an example user interface **1200** to assist in the management of informational transfer in accordance with various embodiments. An administrator for a mobile electronic device can use user interface **1200** to set parameters for pulling data into the mobile electronic device from a server in which the mobile electronic device is registered and for pushing data from the mobile electronic device to a server in which the

mobile electronic device is registered. These parameters become part of the rules for management of informational transfer. User interface **1200** can be implemented in a server. User interface **1200** can include selectable features such as an apparatus **1202**, mode of transmission **1206**, mode parameters **1210**, cost parameters **1212**, priority level **1214**, time of transferal **1216**, recommended time of transferal **1218**, and controls **1222** for using these selectable features. The selectable features can be actuated using any of a number of mechanisms such as, but not limited, a keyboard, a conventional mouse-type device that moves a screen pointer **1201**, a touch screen, an audio control that converts spoken commands into selection of the feature identified by the spoken command, a wireless control that converts selections wirelessly received from a wireless device into selection of the feature identified, or other selection devices.

A server having user interface **1200** can be configured to interact with a number of mobile electronic devices, where each mobile electronic device is registered in the server. The parameters for informational transferal between the server and each mobile electronic device can be set individually for each mobile electronic device based on the policies associated with the registration of the given each mobile electronic device with the server. The selectable feature apparatus **1202** of user interface **1200** provides a visual display of the mobile electronic device whose parameters are currently displayed by user interface **1200** and can be managed by user interface **1200**. This visual display can be presented as interactive display **1203**. Interactive display **1203** shows the current mobile electronic device with the current mobile electronic device highlighted, with the current mobile electronic device shown and the other mobile electronic devices not displayed as provided with conventional drop-down boxes, or with other mechanisms to distinguish one mobile electronic device in the group of mobile electronic devices as the currently selected. A mobile electronic device in the list of interactive display **1203** can be selected for management by actuating the listed name of the desired mobile electronic device listed in interactive display **1203**, for example, by "clicking" using a mouse-type device with pointer **1201** on the listed name. Alternatively, with the listed name highlighted or otherwise selected, select **1227** of controls **1218** can be actuated. Add **1223** of controls **1222** when activated allows for the input of the identification and parameters of another mobile electronic device to the list of mobile electronic devices registered in the server. Once activated a new display can be automatically generated to set or view the parameters for the mobile electronic device being added to the list.

Once a mobile electronic device is selected, its parameters are displayed for management or providing information about the mobile electronic device. The selected mobile electronic device is a mobile electronic device that can engage in transferal of informational content with other mobile electronic devices including mobile electronic devices not registered in the server but registered in another server. A unique identification for transfer of informational content can be displayed or set using feature trust ID **1204** in which interactive display **1205** lists the group of mobile electronic devices that may engage in informational content transferal and servers in which the mobile electronic devices are registered and in which transferal of informational content is permitted. The unique identification for a mobile electronic devices may be entered by selecting the mobile electronic device and its server in interactive display **1205**. Alternatively, selecting the mobile electronic device and its server in interactive display **1205** initiates a process of communication between the server and the selected server of the selected mobile electronic device/server in which the selected server provides the unique identifier if appropriate permission is set in the selected server by the administrator of the server for the selected mobile electronic device. The appropriate administrator for providing information for such informational content transfer can be the user of the selected mobile electronic device. Add **1223** or other mechanisms can be used to initiate addition of new mobile electronic device/server pairs to interactive display **1205**.

The mode of transmission **1206** feature provides an interactive display **1207** of the modes of transmission. Interactive display **1207** for mode of transmission **1206** shows the current mode of transmission with the current mode highlighted, with the current mode shown and the other modes not displayed as provided with conventional drop-down boxes, or other mechanism to distinguish one mode in the group of modes as the currently selected. The current mode can be displayed as a function of instructions stored in a machine-readable medium of the server, such as a non-transitory machine-readable storage medium, based on parameters stored in the memory of the server. The modes of transmission can include, but are not limited to, cellular transmission, Wi-Fi, and USB. Add **1223** can be selected to add new modes.

The mode parameters **1208** feature provides an interactive display **1209** of data parameters for the modes listed interactive display **1207**. The data parameter for each mode can be set to indicate a range of data sizes appropriate for using the mode of transmission. This range can be used when the priority for sending informational content is of such low priority that the informational content can be sent at any time. With the modes listed in interactive display **1209** in ascending order of data size for sending the informational content the data sizes, which can be set, are cut-off sizes. The currently displayed size indicates that informational content in a format having a data size greater than the cut-off level will not be sent by the mode of transmission indicated unless over-ridden by the user of the mobile electronic device. When new modes of transmission are added to interactive display **1207**, additional entries in interactive display **1209** are generated. These new entries can be populated by the user. Alternatively, these new entries can be populated by execution of instructions in a machine-readable medium of the server, such as a non-transitory machine-readable storage medium, where the instructions include evaluation of data size with respect to mode of transmission. This evaluation can include cost parameters for the mode of transmission.

Cost parameters **1212** feature provides an interactive display **1213** of cost parameters for the modes listed in interactive display **1207**. The cost for each mode can be set by a user using interactive display **1213**. Alternatively, selection of cost parameters **1212** can initiate population of the entries for the listed modes by execution of instructions in a machine-readable medium of the server, such as a non-transitory machine-readable storage medium. Selection of a mode listed in interactive display **1213** can initiate the population of the entry for the selected mode by execution of instructions in a machine-readable medium of the server, such as a non-transitory machine-readable storage medium. When a new mode of transmission is added the cost parameters **1212** may be activated for user input, when user input is the selected method for parameter update. These costs associated with the listed modes of transmission can be used with a level of priority for transferring informational content.

Priority level **1214** feature provides an interactive display **1215** of priority for each identified informational content for transfer with respect to the mobile electronic device highlighted or otherwise identified in apparatus **1202** feature. The

priority level for each information content can be set individually for the specified mobile electronic device to which the given information content is to be sent. The priority levels for a particular informational content may differ among the group of mobile electronics devices to which it is to be sent. Activation of priority level **1214** such as by use of pointer **1201** and add **1229** can be used to add new informational content to be sent. In addition, a list of mobile electronics devices to be recipients of the new informational content can be updated. In addition, one or more new mobile electronics devices can be added to receive informational content currently identified as scheduled for transfer. The time to transmit the informational content can be set by the user of the mobile electronic device identified feature apparatus **1202** or the administrator of the server on which user interface **1200** resides.

Time of transferal **1216** feature provides an interactive display **1217** of the time for transferring informational content between the server and the mobile electronic device highlighted or otherwise identified in apparatus **1202** feature. Optionally, interactive display **1217** can display for each informational content the one or more mobile electronic devices associated with the transfer of the respective informational content. With multiple mobile electronic devices shown for a given informational content, the identification of one or more of these multiple electronic devices as the trust partner associated with the highest priority level for the transfer of the informational content can be provided by highlighted or otherwise indicating such mobile electronic device.

Activation of time of transferal **1216**, such as by use of pointer **1201** and add **1229** or other method, can be used by the user to set the times of transfer for each of the informational content. Activation of a particular informational content in interactive display **1217**, such as by use of pointer **1201** or add **1229** or other method, can be used by the user to set the times of transfer for the particular informational content. The time entries of the time of transfer for each informational content listed in interactive display **1217** can be performed by execution of instructions in a machine-readable medium of the server, such as a non-transitory machine-readable storage medium, that takes into account the transfer of each informational content and the various parameters for transferring each informational content to the identified mobile electronic devices and generates recommended times to transfer each informational content. These recommended times may be listed in interactive display **1217** that can be overwritten by the user.

Recommended time of transferal **1218** feature shows the recommended times to transfer each informational content shown in recommended time of transferal **1218**. This recommended time can be maintained though the user has overridden the use of the recommended time in interactive display **1217**. Maintaining the recommended time allows the user to reconfigure the time for transfer of a given informational content to the recommended time, though he had previously overridden the recommended time in interactive display **1217**. Prior to the time set in interactive display **1217** for a particular informational content, a user can activate a recommended time for the corresponding informational content listed in interactive display **1219**. Upon activation of a recommended time or its corresponding informational content listed in interactive display **1219**, the time of transfer for the informational content is automatically updated in interactive display **1217**.

In various embodiments, a change in parameter may include actuating the command, set **1229**, to finalize the change. The various changes to parameters are stored in a database of the server by writing over the parameter in the memory location of the parameter in the database. The parameters and features displayed by user interface **1200** can be realized with user interface arranged as one or more user interfaces. A user interface similar to user interface **1200** can also be configured in a mobile electronic device with selectable feature apparatus **1202** indicating the servers in which the mobile electronic device is registered rather than a list of mobile electronic devices. Other features of user interface **1200** can be similarly modified for use in a mobile electronic device. Having such a user interface in a mobile electronic device allows for management operations of data transferals associated with the mobile electronic device to be managed in the mobile electronic device. Such operations can include management of the parameters for transfer of informational content, corresponding to the mobile electronic device, with other mobile electronic devices in a trust relationship using a server in which the mobile electronic device is registered and another server in which the other mobile electronic device is registered.

FIG. **13** depicts a block diagram of features of an embodiment of a system **1300** having a controller **1305**, a memory **1325**, and a communications unit **1355**. Controller **1305**, a memory **1325**, and a communications unit **1355** can be arranged as a system configured to engage in the transfer of informational content between two mobile electronic devices using directed transmission between two servers. One of the mobile electronic devices can be registered in one of the servers and the other mobile electronic devices can be registered in the other server. Communications unit **1355** can be configured to operate in one or more modes of transmission. Such modes of transmission can be realized using interface units such as cellular wireless interface **1356**, Wi-Fi interface **1357**, and USB interface **1358**.

System **1300** can also include electronic apparatus **1335** and a bus **1315**, where bus **1315** provides electrical conductivity among the components of system **1300**. Bus **1315** can include an address bus, a data bus, and a control bus, each independently configured. In an alternative embodiment, bus **1315** can use common conductive lines for providing one or more of address, data, or control, the use of which is regulated by controller **1305**. In an embodiment, electronic apparatus **1335**, which can be coupled to bus **1315**, may be an additional memory system configured in a manner similar to memory system **1325**. In various embodiments, peripheral devices **1345** include displays, additional storage memory system, and/or other control devices that may operate in conjunction with controller **1305** and/or memory **1325**. In an embodiment, controller **1305** is a processor. A peripheral device arranged as a display can be used with instructions stored in memory **1325** to implement a user interface to manage one or more system components operable to engage in the transfer of informational content between two mobile electronic devices using directed transmission between two servers.

Controller **1305**, a memory **1325**, and communications unit **1355** can be arranged to manage media content and associated information on system **1300**. In an embodiment, system **1300** is arranged as a PC. The PC may include instrumentality distributed throughout the PC to operate as a wireless server. System **1300** arranged as a PC can operate according to any of the various embodiments discussed herein to engage in transfer of informational content with a mobile electronic device such as a mobile wireless device.

In an embodiment, system **1300** is arranged as a mobile electronic device. The mobile electronic device can be a mobile wireless device. System **1300** arranged as a mobile device can operate according to any of the various embodi-

ments discussed herein to engage in transfer of informational content with a wireless server such as a wireless server implemented within a PC.

Various embodiments or combination of embodiments for apparatus and methods for a system, such as a PC, to engage as a system in the transfer of informational content between two mobile electronic devices using directed transmission between two servers, as described herein, can be realized in hardware implementations, software implementations, and combinations of hardware and software implementations. One of the mobile electronic devices can be registered in one of the servers and the other mobile electronic devices can be registered in the other server. These implementations may include a machine-readable medium, such as a non-transitory machine-readable storage medium, having machine-executable instructions, such as a computer-readable medium having computer-executable instructions, for operating the system in a relationship with one or more mobile electronic devices such that transferal of informational content between the system and the mobile electronic device and between the system and another server is managed. The communications of the system with a mobile wireless device can be conducted on a secured basis. The machine-readable medium is not limited to any one type of medium.

Various embodiments or combination of embodiments for apparatus and methods for a mobile electronic device, such as a mobile wireless device, as described herein, can be realized in hardware implementations, software implementations, and combinations of hardware and software implementations. These implementations may include a machine-readable medium, such as a non-transitory machine-readable storage medium, having machine-executable instructions, such as a computer-readable medium having computer-executable instructions, for operating the mobile device to manage transferal of informational content between the mobile electronic device and a system, such as a PC, and between the mobile electronic device and another mobile electronic device. The communications between a mobile wireless device and the system can be conducted on a secured basis. The machine-readable medium is not limited to any one type of medium.

Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that any arrangement that is calculated to achieve the same purpose may be substituted for the specific embodiments shown. It is to be understood that the above description is intended to be illustrative, and not restrictive, and that the phraseology or terminology employed herein is for the purpose of description. Combinations of the above embodiments and other embodiments will be apparent to those of skill in the art upon studying the above description.

What is claimed is:

1. A method comprising:

receiving a command over a secure communication channel linking a first server to a first mobile electronic device to transfer informational content from the first server to a second mobile electronic device, wherein the first mobile electronic device registered in the first server as a managed client such that the first mobile electronic device is managed by the first server, wherein the secure communications channel is based on the first mobile electronic device being registered with the first server, the informational content being information for direct use by a user receiving the information, and the information for direct use by the user being different from data exchange between devices operating to accomplish a task not directly perceived by the user; and

initiating from the first server, based on receiving the command from the first mobile electronic device, a directed transmission between the first server and a second server to transfer the informational content between the first mobile electronic device and the second mobile electronic device,

the second mobile electronic device registered in the second server as a managed client such that the second mobile electronic device is managed by the second server,

wherein the first mobile electronic device is not registered as a managed client of the second server and the second mobile electronic device is not registered as a managed client of the first server.

2. The method of claim **1**, wherein the method comprises:

receiving the informational content in the first server from the first mobile electronic device; and

receiving identification information in the first server from the first mobile electronic device such that the identification information identifies the second mobile electronic device as being the recipient of the informational content specified for transmission from the first server, the identification information including a unique identifier of the second mobile electronic device, and

wherein the directed transmission is based on the identification information.

3. The method of claim **2**, wherein receiving the informational content in the first server from the first mobile electronic device is based on criteria for transmission from the first mobile electronic device to the first server, the criteria including a correlation between time of transmission and an analysis of one or more parameters of a parameter set, the parameter set including modes of transmission, a data size for transferring the informational content, a priority for the transfer of the informational content from the first mobile electronic device to the second mobile electronic device, and user preference.

4. The method of claim **3**, wherein the modes of transmission includes one or more of cellular wireless, Wi-Fi, or USB.

5. The method of claim **3**, wherein the method includes:

analyzing, in the first server, the criteria; and

sending, to the first mobile electronic device from the first server, a recommended time for sending the informational content to the first server from the first mobile electronic device, the recommended time based on analyzing the criteria.

6. The method of claim **5**, wherein analyzing parameters includes determining a time to transfer the informational content and a mode of transmission, the determination based on comparing modes of transmission available including cellular wireless, Wi-Fi, and USB relative to data size of the informational content with respect to speed of transferal in each of the modes of transmission and the cost of the transfer of the informational content associated with each mode of transmission.

7. The method of claim **1**, wherein the method comprises:

selecting, in the first mobile electronic device, the informational content for transfer to the second mobile electronic device;

determining, in the first mobile electronic device, a unique identifier of the second mobile electronic device, the unique identifier associated with transfers from the first mobile electronic device to the second mobile electronic device;

sending the unique identifier from the first mobile electronic device to the first server to transfer the informational content from the first server to the second server; and

transmitting the informational content from the first mobile electronic device to the first server such that initiating transfer of the informational content to the first server is based on criteria for transmission from the first mobile electronic device to the first server.

8. The method of claim **7**, wherein initiating transfer of the informational content to the first server based on criteria includes initiating transfer based a correlation between time of transmission and an analysis of one or more parameters of a parameter set, the parameter set including modes of transmission and a data size for transferring the informational content.

9. The method of claim **8**, wherein the correlation and the analysis is performed in the first mobile electronic device.

10. The method of claim **8**, wherein initiating transfer of the informational content to the first server includes initiating the transfer of the informational content based on a time set by a user of the first mobile electronic device.

11. The method of claim **1**, wherein the method comprises:

receiving the informational content in the second server from the first server;

receiving identification information in the second server from the first server such that the identification information identifies the second mobile electronic device as being the recipient of the informational content, the identification information including a unique identifier of the second mobile electronic device;

scheduling transmission of the informational content from the second server to the second mobile electronic device such that the scheduling is based on criteria for transmission from the second server to the second mobile electronic device; and

transmitting the informational content from the second server to the second mobile electronic device according to the scheduling of transmission.

12. The method of claim **11**, wherein scheduling transmission of the informational content from the second server to the second mobile electronic device includes scheduling the transmission based a correlation between time of transmission and an analysis of one or more parameters of a parameter set, the parameter set including modes of transmission and a data size for transferring the informational content.

13. The method of claim **12**, wherein the modes of transmission includes one or more of cellular wireless, WiFi, or USB.

14. The method of claim **1**, wherein the method comprises analyzing transferal characteristics associated with transferring the informational content from the first mobile electronic device to the second mobile electronic device, the transferring of the informational content having three transfer segments including a segment transferring the informational content from the first mobile electronic device to the first server, a segment transferring the informational content from the first server to the second server, a segment transferring the informational content from the second server to the second mobile electronic device; and

scheduling transferal initiation for a transfer segment of the three transfer segments, the scheduling based on criteria that include transferal characteristics of the transfer segment or user preference or both transferal characteristics of the transfer segment and user preference.

15. A machine-readable non-transitory storage medium that stores instructions, which when performed by a machine, cause the machine to perform operations comprising:

receiving a command over a secure communication channel linking a first server to a first mobile electronic device to transfer informational content from a first server to a second mobile electronic device, wherein the first mobile electronic device registered in the first server as a managed client such that the first mobile electronic device is managed by the first server, wherein the secure communications channel is based on the first mobile electronic device being registered with the first server, the informational content being information for direct use by a user receiving the information, and the information for direct use by the user being different from data exchange between devices operating to accomplish a task not directly perceived by the user; and

initiating from the first server, based on receiving the command from the first mobile electronic device, a directed transmission between the first server and a second server to transfer the informational content between the first mobile electronic device and the second mobile electronic device,

the first mobile electronic device registered in the first server as a managed client such that the first mobile electronic device is managed by the first server and the second mobile electronic device registered in the second server as a managed client such that the second mobile electronic device is managed by the second server, wherein the first mobile electronic device is not registered as a managed client of the second server and the second mobile electronic device is not registered as a managed client of the first server.

16. The machine-readable non-transitory storage medium of claim **15**, wherein the instructions include instructions to operate as the first server to perform operations comprising:

receiving the informational content in the first server from the first mobile electronic device; and

receiving identification information in the first server from the first mobile electronic device such that the identification information identifies the second mobile electronic device as being the recipient of the informational content specified for transmission from the first server, the identification information including a unique identifier of the second mobile electronic device, and

wherein the directed transmission is based on the identification information.

17. The machine-readable non-transitory storage medium of claim **15**, wherein the instructions include instructions to operate as the first mobile electronic device to perform operations comprising:

selecting, in the first mobile electronic device, the informational content for transfer to the second mobile electronic device;

determining, in the first mobile electronic device, a unique identifier of the second mobile electronic device, the unique identifier associated with transfers from the first mobile electronic device to the second mobile electronic device;

sending the unique identifier from the first mobile electronic device to the first server to transfer the informational content from the first server to the second server; and

transmitting the informational content from the first mobile electronic device to the first server such that initiating transfer of the informational content to the first server is

based on criteria for transmission from the first mobile electronic device to the first server.

18. The machine-readable non-transitory storage medium of claim **15**, wherein the instructions include instructions to operate as the second server to perform operations comprising:

receiving the informational content in the second server from the first server;

receiving identification information in the second server from the first server such that the identification information identifies the second mobile electronic device as being the recipient of the informational content, the identification information including a unique identifier of the second mobile electronic device;

scheduling transmission of the informational content from the second server to the second mobile electronic device such that the scheduling is based on criteria for transmission from the second server to the second mobile electronic device; and

transmitting the informational content from the second server to the second mobile electronic device according to the scheduling of transmission.

19. A server comprising:

one or more processors;

memory operatively coupled to the one or more processors, the memory configured to store instructions to:

receiving a command over a secure communication channel linking a first server to a first mobile electronic device to transfer informational content to a second mobile electronic device, wherein the first mobile electronic device registered in the first server as a managed client such that the first mobile electronic device is managed by the first server, wherein the secure communications channel is based on the first mobile electronic device being registered with the first server, the informational content being information for direct use by a user receiving the information, and the information for direct use by the user being different from data exchange between devices operating to accomplish a task not directly perceived by the user; and

initiate, based on receiving the command from the first mobile electronic device, a directed transmission of the informational content with an other server to transfer the informational content to the second mobile electronic device, wherein the server is operable to have one of the first and second mobile electronic devices registered in the server as a managed client such that the registered mobile electronic device is operatively managed by the server and the other one of the first and second mobile electronic devices is not registered as a managed client of the server; and

a network interface arranged to operatively couple to a network to implement at least directed transmission with the other server.

20. The server of claim **19**, wherein the instructions include instructions to operate the server to:

receive the informational content from the first mobile electronic device; and

receive identification information from the first mobile electronic device such that the identification information identifies the second mobile electronic device as being the recipient of the informational content specified for transmission from the server, the identification information including a unique identifier of the second mobile electronic device; and

wherein the directed transmission is based on the identification information.

21. The server of claim **19**, wherein the instructions include instructions to operate the server to:

receive the informational content from the other server;

receive identification information from the other server such that the identification information identifies the first mobile electronic device as being the recipient of the informational content, the identification information including a unique identifier of the first mobile electronic device;

scheduling transmission of the informational content from the server to the first mobile electronic device such that the scheduling is based on criteria for transmission from the server to the first mobile electronic device; and

transmitting the informational content from the server to the first mobile electronic device according to the scheduling of transmission.

22. The server of claim **19**, wherein a network interface is operable with the Internet to conduct directed transmission to and from the other server.

23. A mobile electronic device comprising:

one or more processors;

memory responsive to the one or more processors, the memory arranged to store instructions to:

engage in a transfer of informational content with an other mobile electronic device using directed transmission between a first server and a second server, the informational content being information for direct use by a user receiving the information; and

transmit a command, over a secure communication channel linking the mobile electronic device to a first server, to use directed transmission between the first server and the second server to transfer the informational content to the other mobile electronic device,

the directed transmission based on the mobile electronic device being operatively registered in the first server as a managed client such that the mobile electronic device is managed by the first server and the mobile electronic device is not registered in a share group of the first and second servers with the other mobile electronic device, and wherein the secure communications channel is based on the mobile electronic device being registered with the first server; and

a transmission interface responsive to execution of the instructions to transmit the command.

24. The mobile electronic device of claim **23**, wherein the instructions include instructions to operate the mobile electronic device to:

select the informational content for transfer to the other mobile electronic device;

determine a unique identifier of the other mobile electronic device, the unique identifier associated with transfers from the mobile electronic device to the other mobile electronic device;

send the unique identifier to the first server to transfer the informational content from the first server to the second server; and

transmit the informational content to the first server such that initiating transfer of the informational content to the first server is based on criteria for transmission from the first mobile electronic device to the first server.

25. The mobile electronic device of claim **24**, wherein the criteria includes modes of transmission and a data size for transferring the informational content.

26. The mobile electronic device of claim **23**, wherein a transmission interface is compatible with one of more modes of transmission selected from of cellular wireless, WiFi, and USB.

* * * * *